Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

The Poultry Keeper

PARKESBURG. PA.

LIBRARY
OF THE
U. S. Department of Agriculture.
Class 47.8
P86
8-159
v. 10

INV. '60

THE

POULTRY KEEPER.

VOLUME X.

FROM

APRIL 1893 TO MARCH 1894.

P. H. JACOBS, EDITOR.

PARKESBURG, PA.:

THE POULTRY KEEPER COMPANY,

PUBLISHERS.

55877

VOL. X. PARKESBURG, PA., APRIL, 1893. No 1

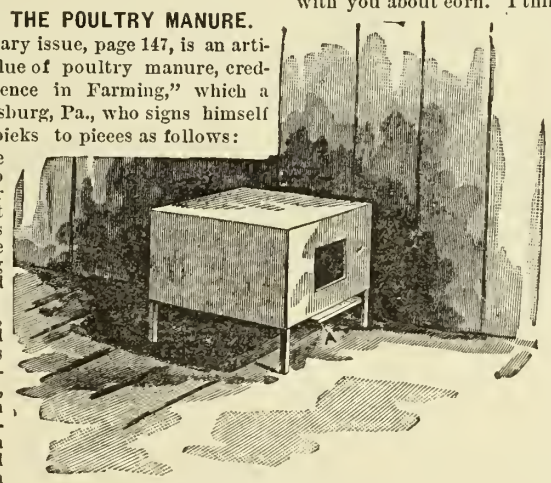
APR 9 1897

CONTENTS.

Nest to Prevent Egg-Eating. 1
Wrong on the Poultry Manure. 1
Miller Purvis" and Corn. 1
Hens and Horse Feed. 1
Chicken Cholera. 2
A Large Illinois Establishment. 2
Mr. Pugh's Black Minorcas. 3
Light on the Javas. 3
Keeping Eggs in Cold Weather. 3
Look Out for Gapes. 3
Large French Establishment. 3
A Case for Consideration. 3
Waterproofing Cotton Cloth. 3
Dripping from the Wall. 3
Imported Indian Games. 4
Corn and Uncle Mike. 4
They Died. 4
Feather Eating. 4
Growing the Green Food. 4
Care of Young Turkeys. 4
Capons for Market. 4
The Plymouth Rock "Eureka." 4
Foul Air Nonsense. 5
Distemper in Dogs. 5
Genesis of Egg Shells. 5
A Great Curiosity. 5
Butter and Eggs. 5
Grit and Work for Hens. 5
The Wooden Hen Ahead. 5
Good Results in Manitoba. 5
An Experimental Incubator. 5
A Point on Feeding. 5
Ventilation at Zero. 5
Mr. McCormick's Poultry House. 5
The Cow and Hen Comparison. 6
Know What You are Doing 6
From Old Kentucky. 6
Poultry in Florida. 6
Feed for Young Chicks. 6
Setting a Trap for "Varmints." 6
Winter Laying. 6
Avoiding Mistakes. 6
Keeping the Water Warm in Winter. 6
Good Winter Laying—Feeding Corn Husks. 6
Lime and Lice. 6
Brief Remarks. 7
The Mystery of Scoring. 7
Admitting New Breeds. 7
Editorial Items. 8
Water Fountains. 8
The First Year. 8
The Best Breed. 8
Only a Speck. 9
Cheap—Very Cheap. 9
The Bone Cutter is King. 9
Remarkable Scoring. 9
He Wants to Press the Button. 9
The Philadelphia Show. 9
The New York Show. 9
House With Glass Runs. 10
Origin of Buff Wyandottes. 10
Late Chicks for Home Use. 10
Incubators and Hens. 10
The No-Water Plan with Chicks. 10
Utilizing Blood for Poultry. 10
Cross-Bred Roosters. 10
A New Remedy for Gapes. 10
How to Fatten Ducks. 10
Young Turkeys. 10
Feather Pulling in the Flock. 10
Grease the Heads. 10
Look Out for Lice. 10
Shipping Live Fowls. 10
Strange Hens in the Flock. 10
A Hen at Auction. 11
Dressed Poultry. 11
Winter Diseases of Stock. 11
They Cannot Let Go. 11
The Goslings. 11
Diseases of Fowls. 11
Plumage of Patridge Cochins. 11
Hens that Lay the Most Eggs. 11
Fowls for the Table. 11
What Feed is Worth. 11
A Revolution in Keeping Poultry. 12
Chicks in Brooders. 12
Lice and Gapes 12
They Score Alike. 12
Mr Babcock and Revision. 12
Canibal Feather Pullers. 12
Which Way to Cross. 12
Fed off Their Legs. 12
Eating Diseased Fowls. 12
Liver Disease 12
Advertisements. 12
Advertisements. 13
Advertisements. 14
Advertisements. 15
Bureau of Information. 16
The Poultry Products. 16
Monstrosities at Shows. 16
Publisher's Department. 16

NEST TO PREVENT EGG-EATING.

A hen cannot eat the eggs in her nest unless she has advantages for so doing. The illustration is no novelty, but it shows how to prepare a nest to prevent egg-eating by the hen. A hen can only indulge her propensity when she stands by the eggs; hence, open nests, close to the floor, permit her to do her work of damage. An ordinary soap box will answer as a nest-box, the top, sides, ends and bottom not being removed. An opening in front, only sufficient for the hen to go in, should be made, and the nest box should be raised to the height of ten inches from the floor to the bottom of the nest-box. A ledge (A) may be placed in front of the opening, to permit the hen to enter the nest, but it should not be over two inches wide. Legs, blocks or bricks may be used to keep the nest-box off the floor. The box should be in a rather dark place. When the hen has laid, she will not attempt to eat the eggs in the box, but will come off to the ground to do so, where she will be foiled, as she cannot then reach the eggs.



NEST TO PREVENT EGG-EATING.

WRONG ON THE POULTRY MANURE.

In our January issue, page 147, is an article on the value of poultry manure, credited to "Science in Farming," which a reader in Pittsburg, Pa., who signs himself Subscriber," picks to pieces as follows:

Will you be kind enough to inform your readers what breed of hens makes manure containing thirty-two and six-tenths lbs of nitrogen, thirty and eight-tenths lbs. of phosphoric acid, and seventeen pounds of potash, per each one hundred pounds, worth $8.20. Also, what page in "Science on Farming" this remarkable statement is found. Would it not pay to keep a few thousand of these hens just for manure?

Fortunately for us the error is not ours, as we got it with the scissors, but we see where the trouble is. Instead of "one hundred pounds" of droppings the writer intended a *half ton*, or 1,000 pounds, which will bring the proportions about right. Of course no two tons of manure will be found exactly alike, as the quality of the manure depends not only on the kind of food consumed, but also whether from laying hens, growing stock, or fowls that are being fatted, as well as other conditions. We thank our subscriber for so kindly correcting the error, however.

"MILLER PURVIS" AND CORN.

That experienced poultryman and able writer, "Miller Purvis," is giving his experience with corn. He seems to suppose that we hate corn. He believes in corn, and sends a letter to the *Indiana Farmer*, in which he gives all the credit for good results to *corn*. But here is what he says:

"As a general thing, when you see a thing in the POULTRY KEEPER it is so, but there is one thing that excellent paper clings to that we cannot agree with it about. It persistently claims that corn is not good for poultry when fed to them steadily, as the main food. We have been thinking this matter over for some while, and have been trying to get at the truth in the matter of food values, and we are compelled to say that corn is about the best single article of food that we ever tried, and we have the first time to observe evil effects from it when properly fed. Nine tenths of the hens of the country are given corn for breakfast, dinner and supper the year through, and if it was as bad as some of our brethren try to make, the poultry population would be decimated every year.

"Now don't say, anyone, that we are saying that hens fed on corn alone will produce the best possible profits, for we do not think they will. But we do say that if we had to restrict ourselves to one single kind of grain we would not hesitate a minute to choose corn. We feed our hens corn every day in the year, and as they lay well winter and summer, we conclude that they are in good condition, and the glossy plumage and red combs of our Leghorns prove the same thing. We had a letter not long ago from one of the best breeders in the State, and one who wins his share of the prizes at the shows, and he says: "I agree with you about corn. I think it one of the best kinds of feed we have, and give more of it to my Houdans than I do of all other kinds of grain together.

"We have some Brahmas that we want to put on exhibition and we have been feeding them heavily on corn and keeping them shut up on the barn floor and the pullets are laying as regularly as if we were feeding them on the most approved feed. Of course they have plenty of grit and are fed crushed bone and milk, but corn is the main food they get.

"The point we want to make is that corn is not poison to the hens it is fed to. Some of the poultry papers say so much of the evils resulting from feeding corn that one would think that it was not fit to be fed at all, and Bro. Jacobs is so prominent that all the smalled fry are apt to take up anything he suggests and give it such emphasis that we believe harm often results, when if his advice was literally followed the correctness of his advice would be made apparent. On general principles we are with him, but in the matter of corn we cannot subscribe to all he says. Too much of any kind of grain will work damages and any of the evil effects that follow overfeeding of corn may be brought about by making the hens too fat with any grain that may be named. If we have plenty of milk and ground bone and corn we can make our hens lay as well as with any other kinds of food."

We must deny that we ever stated that corn was not good for poultry when fed to the hens steadily. We claimed that it should not be fed *exclusively*. We are often informed by readers that they do not agree to our claims, but investigation usually shows that they misunderstood our position and Mr. Purvis himself remarks above that hens will not produce the best possible results if fed on corn alone. We have only aimed to teach our readers that a hen should have something more than corn. When anyone can point out, in this journal, where we ever condemned corn as a partial food for poultry we will feel under obligations, as we are not guilty.

We believe hens should have *some* corn in winter, though we believe oats are better in summer. If corn, with *fresh bone and milk* (see above) is the diet for the Brahma pullets mentioned we have more faith in the bone and milk than in the corn.

Mr. Purvis condemns feeding *too much* of any kind of grain, and he says, "If we had plenty of milk and ground bone and corn we can make our hens lay as well as with any other kinds of food," Just so; for it is almost a complete food, and, with a little green food as an aid, we would like to ask Mr. Purvis what the "other kinds of food" may be. The ration he suggests is *our* preaching exactly.

But here is what Mr. Purvis says of *corn* in a letter to us. Bear in mind he is defending *corn*:

"My Leghorns have laid all winter except for three weeks, when I had to keep them closely shut up, on account of the awful weather. I keep only a small flock, but I try to have them the best, and don't forget that one of the best points is to have them good layers. I'd rather have an eighty-five point hen that will lay 150 eggs in a year, than a ninety-five point one that will only lay 120 eggs in the same time. I have had my flock and their ancestors for twelve years, and they have come to be members of the family, and I know them pretty well. I feed corn most of the time the year through giving wheat as a change occasionally. My flock has access to clover hay, cut green and nicely cured, and I feed some cut bone and all the buttermilk from the creamery that they want. By following this plan I find that corn is the best food I can feed."

Note how well he speaks of *corn*. His hens have access to clover hay (cut fine), all the buttermilk from the creamery that they want, some bone, and by following *that* plan he "finds *corn* the best food he can feed.

Come again, Mr. Purvis, for you are right over on our side of the fence. We believe feeding corn just as you suggest, and you are mistaken in supposing that we ever advised readers to discard it.

HENS AND HORSE FEED.

While my neighbors have been complaining of the laziness of their hens in producing eggs this winter our hens have been remarkably prolific. About the second week in December our boys began to give them what they called "horse feed" every morning for breakfast. The stuff is warmed and flavored with a small quantity of cayenne pepper. Table scraps are also given them, and they eat all with a good appetite.

Now for the result. We have nine laying hens, but up to the time when we began to give the "horse feed" we got only an egg now and then. Since that time our success has been wonderful. During the last three weeks of December, by the daily record, we have gathered eighty-six eggs, all of good size. The hens still continue their laudable work, and yesterday one of my boys brought from the coop six eggs. Some of my friends keep from ten to twenty hens each, but they don't get a single egg and have not for a long time.—*Edward M. Skidmore in Rural New Yorker.*

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

CHICKEN CHOLERA.

Symptoms of Cholera—It Kills Quickly—No Sure Cure—The Best Remedy.

The valuable researches of Dr. Klein into the nature of certain epidemic diseases affecting grouse and pheasants were noted in a review of his recently published treatise, says the *London Field*. In the same volume he also treats at length of two of the most fatal forms of disease that affect fowls when kept in large numbers, viz: fowl cholera, and what he terms fowl enteritis. Chicken cholera is much better known in France and Germany than in this country. It is an acute infectious disease, rapidly fatal, and producing great destruction among fowls that are crowded together.

In from eighteen hours to a day and a half after the fowls are exposed to the infection they manifest the first symptoms of the disease, being much purged with greenish evacuations, and show unwillingness to move. They refuse food, become sleepy, and die in from twenty-four to forty-eight hours. On post-mortem examination the internal organs are found much congested with blood, and the viscera abound with immense numbers of minute short bacteria, known as the baccilli of fowl cholera. Their number is often greater than that of the blood corpuscles themselves.

If other fowls, pigeons, or rabbits are inoculated, the disease is invariably produced, and they die usually under thirty-six hours with the same symptoms. In a rabbit, death usually takes place within twenty-four hours, the blood swarming with these fatal bacilli. These bacilli can be cultivated or grown in a solution of gelatine, which, in its turn, can be employed to disseminate the disease in either of the three animals named, viz.: fowls, pigeons and rabbits, and so great is the vitality of the growth that the bacilli may be propagated in gelatine for an unlimited number of times.

Fowls can be infected by feeding on any substances contaminated with the bacilli. Dr. Klein distinctly states that the contents of the intestines teem with bacilli, and therefore it is certain that, in the usual conditions under which fowls are kept in crowded poultry farms, the food picked up from the ground by them is contaminated, and the infection spreads rapidly.

Of the other disease, that of fowl enteritis, we quote Dr. Klein's own description. He writes: "In 1888 Mr. W. Cook, well known through his works and writings on fowls and fowl breeding, had on his poultry farm, then at Orpington, in Kent, in about two acres of land, a fatal epidemic of fowls, by which he lost, between March, 1888, and March, 1889, over 400 birds. The greatest number of birds, nearly 200, died during March and April, 1888, occasionally six per diem. During the beginning of 1889 the number of fatal cases had decreased considerably—to about seven per week.

Post-mortem examinations proved the distinct difference between this disease and fowl cholera. The lungs of all the animals were healthy, there was no congestion, and no hemorrhage. The liver was soft and enlarged, and the bacteria in the blood, instead of being numerous, was very few, but more numerous in the spleen. The mucus in the intestines of the Orpington fowls contained bacteria. As already stated, fowls, pigeons and rabbits inoculated with the blood and bacteria of fowl cholera invariably died; but inoculated with the blood of the Orpington fowls, pigeons proved quite insusceptible, as were the rabbits.

Fowls that were inoculated remained well for four or five days, then they left off feeding, became quiet, showed a purging of greenish-yellow evacuations, but in no case were they found sleepy, as in fowl cholera. The animals rarely showed illness before the fourth day—an important distinction which was proved by experiments on several dozen fowls. Death in no instance occurred before the sixth day of the disease. The remarkable and striking fact that pigeons and rabbits were insusceptible to it, proves that fowl enteritis, or what may be termed the Orpington poultry farm disease, is wholly distinct from fowl cholera."

A very important series of experiments showed that the intestinal contents of a fowl and the mucus which were contained in the intestines, were capable of producing the disease in its most fatal form. Regarding other animals, we have already stated that rabbits and pigeons are not susceptible to the Orpington disease, although they are to fowl cholera; nor are guinea pigs, only in a minor degree. Dr. Klein then recounts a large number of experiments made to prove whether the virus of the Orpington disease can be attenuated. These are most interesting, scientifically, but practically it appears to us that it is much more satisfactory to keeps fowls under conditions in which they will not contract and perpetuate the disease, than to inoculate them with any attenuated virus; such a method is not likely to come into practical utility.

These experiments of Dr. Klein were not carried on in isolated cases, but more than sixty fowls were experimented on in order to prove the nature of this fatal disease. In conclusion Dr. Klein says that, although the two diseases are different, the mode of their spread and general behavior are so similar that the rules that should guide us in the prevention and spread of either one or the other should be the same. These rules, he says, are three in number: 1. Every fowl that shows any suspicion of the disease should be at once removed, killed and burned. 2. The remaining fowls should at once be transferred to new ground, and if practicable, be divided into separate small lots. 3. The ground from which the infected fowls have been removed should be turned, disinfected and quicklimed, and not used for fowls for some time. These seem to me the best and easiest ways to prevent the healthy fowls contracting the infection by picking up food tainted with the evacuations (full of the specific bacilli) of the diseased fowls.

But it is obvious that Dr. Klein is not an experienced poultry-keeper on a large scale, or his verdict would have been against keeping fowls in the overcrowded condition in which these fatal diseases alone take their origin and spread with extreme rapidity. The keeping of 400 fowls on two acres of land is a condition of things under which no one has any right to expect success. That 200 birds, according to his own statement, should die during two months, is a singular comment upon his assertion that the owner of the farm is a "successful breeder of poultry." We may mention that Dr. Klein originally described this disease in the *Field* of April 13th, 1889, where it was illustrated by a large number of engravings, one of which, showing the vast number of bacilli in a drop of mucus from the evacuations of the fowls, has been reproduced in "Tegetmeier's Poultry for Table and Market," with this comment:

"That, as in the case of fowl cholera, once let a diseased fowl appear in a poultry yard the disease would rapidly spread to the healthy birds, these latter picking up their food from a soil tainted with the contagion voided in the evacuations by the diseased fowl; the smaller the area of the poultry yard, and the larger the number of the fowls the more rapidly will it spread."

Poultry farming establishments are usually started by enthusiasts, who will listen neither to reason nor the experience of others, and it is doubtful whether they will be converted from the error of their ways, even by Dr. Klein's demonstration that the excrement of one fowl will affect and destroy a flock of 400 birds on two acres.

The dread of cholera prevents many persons from venturing in the poultry business, as a few days only are required for the flock to be decimated, says the *Rural Home*. It is a disease for which, so far, no certain cure is known, and yet hundreds of remedies have been suggested. Success with remedies for supposed cholera has been, in a majority of cases, treatment for indigestion, the symptoms of which strongly resemble those of cholera. The cholera works quickly, but indigestion (usually due to the system of management) may cause the fowl to be sick for weeks.

One of the surest signs of cholera is intense thirst. The fowl has a nervous, anxious expression, great fear being also exhibited. It will drink large quantities of water, but cares nothing for food; the medicine should therefore be given in the drinking water. Cholera is quick in its deadly work, the birds dying in from six to twenty-four hours. Indigestion causes the birds to be ill for a week or more, and they will eat some, and drink only moderately. The droppings in both cases are a yellow, and then greenish yellow. Turkeys are as subject to both diseases as chickens, and it seems more difficult to cure them, as chickens may at times eat, and in that manner partake of medicine, but a turkey cannot be induced to eat anything.

There are two causes for cholera. One is the filth, and exposure to filth, so prevalent in some yards. There are those who take great pains to clean the houses, but never touch the yards. The well known Douglass mixture, which is made by dissolving a pound of copperas in two gallons of water, and adding to the solution one gill of sulphuric acid (oil of vitriol) is the best disinfectant that can be used, and it should be freely sprinkled over the yard, the yard spaded, and then a thorough sprinkling given again.

In this manner the germs of the disease may be destroyed, which, if not done, will cause the cholera to appear every year. All bodies of fowls should be burned, or buried three feet deep, well saturating the bodies and earth around them with the Douglass mixture. The poultry house, also, should be well saturated, and when dry, chloride of lime should be dusted into every crack and crevice. When the disease has appeared, every foot of ground over which the birds (sick or well) have travelled is contaminated, and though the work of disinfecting the premises may be quite a task, yet it must be done to insure safety from an outbreak at any other time.

To avoid the cholera make it a rule never to bring into your flock a bird from elsewhere. No matter how well and healthy the flock may be from which you procure your extra bird, the germs of the disease can be brought with it, and only a few conditions will be necessary to develop the disease. As soon as the bird is sick at once remove it from the others. Unless very valuable the first one or two cases may be disposed of by destroying the birds, but, if the disease is epidemic, heroic measures must be resorted to, provided the wish is not to kill the birds.

To treat for the cholera the handling of each bird in a large flock is more than many wish to undertake. The best and easiest mode of giving medicine is, as stated, in the drinking water. Carbolic acid is a poison and unsafe, but in case of cholera one poison must be met with another; you must poison the germ; to do this add a teaspoon of pure liquid carbolic acid to one and a half quarts of water, and give no other water to drink; if any food is given, let it be mixed with the carbolized water. The fowls will drink the water, and it may cure them, or perhaps kill some of them, but the disease will be death without a desperate remedy, at all events, and it is well to go ahead.

Those that survive will be very weak. As soon as a change for the better occurs reduce the carbolic acid, adding one teaspoonful to a gallon of water, and as soon as the appetite returns cease the use of the acid, and add a mixture of a tablespoonful of extract of ginger, and spirits of camphor using one gallon of drinking water; to the water also add a teaspoonful of citrate of iron, which is a powder.

The food for a few days should be cooked; rice, stale bread, fresh boiled potatoes, fresh scalded milk, or a little cooked meat may be given. After they appear well, no further difficulty need be feared, provided the premises have been thoroughly disinfected, as suggested. Fowls that are lousy will not be able to endure an attack of cholera, and very fat fowls seldom recover, no matter how treated. Only birds in prime condition, not inbred or lacking in vigor, will be able to go through a siege of cholera.

As a preventative of cholera the birds should be fed regularly; in the summer avoid too much grain. Withholding green food for a time and then giving an excess of it at a meal will sometimes induce it to appear. It may be brought in the flock by dogs, birds, insects, and many other ways, but cleanliness will do much to prevent it spreading in the flock; there is no breed of fowl exempt from it—the cholera proof fowl is not discovered as yet. The best proof against the disease is to avoid overfeeding, filth and lice.

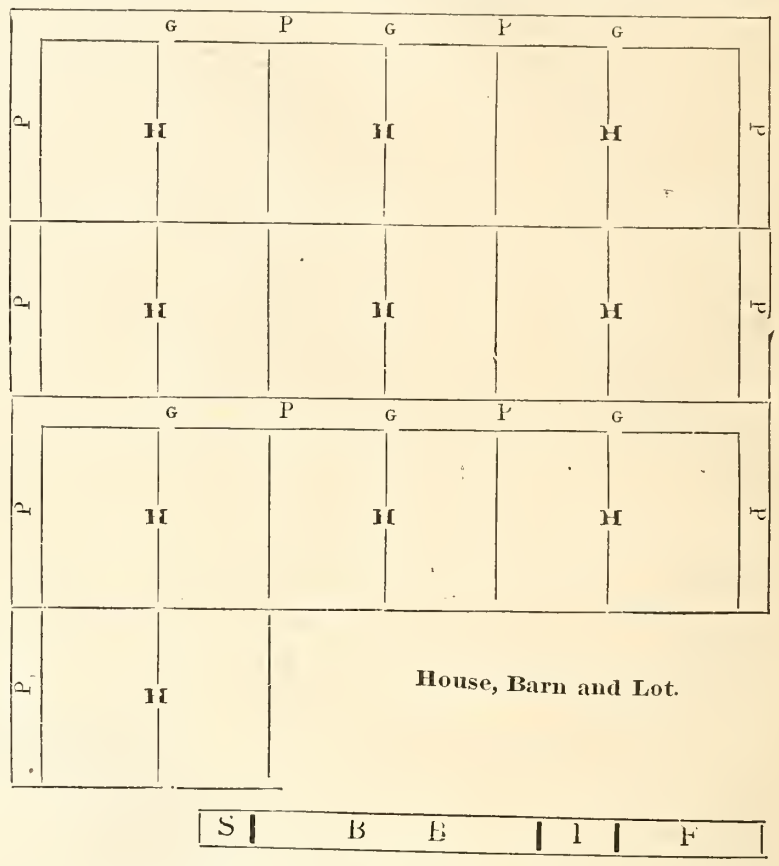
Cholera does not appear in some sections. In southern New Jersey, where the soil is very sandy and the heavy rains wash all the impurities down from the surface, cholera and gapes are unknown diseases, which is conclusive proof that the filth on the surface of the yard is a prime factor in promoting cholera. The person who invents a sure cure for cholera has a fortune in his grasp, but it must be something better than the thousand and one so-called sure cures that have been sold from time to time but which have been unserviceable. The sure cure cholera cure must meet some desperate cases, and must be placed on the market a long time before full confidence can be expected by purchasers.

A LARGE ILLINOIS ESTABLISHMENT.

Messrs. Carmi & Griffin, of Charleston, Ill., sends us a description of their large poultry establishment, at our request, which is best described in a letter from them, as follows:

"As your editor requested, we take pleasure in sending a description of our yards and houses.

"Our houses are built for the accommodation of twenty fowls in each. They are built in three rows, of three each, with one extra one, making ten in all, and accomodating two hundred hens. We have sent a rough pencil sketch, showing position of houses and yards, and how they are entered. In the plan P P are passage-ways, eight feet wide; H H are the houses; G G are the entrance gates from the passage-ways; B B is the brooder house; S, the stove house, holding heating apparatus and furnace for cooking feed; I, the incubator house, and F, the room for storing feed. This is to show the positions. Each chicken house is seven by fourteen feet, with a partition through the center, so that each flock of ten hens and a cock has half a house and a yard to itself. Houses are five feet high in rear, and ten feet in front, with two window sashes in front, south. These houses may seem small, but with our movable roosts and dropping boards; with the nests built on the low sides of the houses, where the sun will shine into them in winter, and under them on the ground in summer, we find them large enough. Hens can be out nearly any day in winter, but when they cannot, they are made to scratch in straw on the gravel floor of the houses for small grain. Our hens are Barred Plymouth Rocks, we thinking them best for our purpose—early market broilers. But this season we are trying a cross of White Leghorn cock on Light Brahma hens, and we expect as good a table chick, and better laying hens, than the Plymouth Rocks. Our yards are forty-six by sixty-nine feet, this being the size to best suit this corner of our farm, with fences of wire netting, two inch mesh, five and a half feet high. This confines Leghorns as well as Plymouth Rocks as soon as they get used to the quarters, although they may try to fly out at first.



House, Barn and Lot.

A LARGE ILLINOIS ESTABLISHMENT.—PLAN OF HOUSES AND YARDS.

"The brooder house is one hundred feet long and twelve feet wide, being two stories high. The upper floor is not now fitted up, but will be next fall. It will be for the younger chicks, and the lower floor is for the older, so that they may go out doors when the weather permits. It has a capacity of four thousand chicks, twenty pens below, and as many above. A passage way, three feet wide, runs the whole length. Brooders are placed next to the passage way, and are cleaned daily without entering the pens. Each pen is five by nine feet. Building fronts south, and has a window for each pen, as chicks love sunshine. The brooders are the hot water pipe system, with both upper and under heat, and they work admirably. The stove house has already been mentioned.

"Incubator house is sixteen by twenty-four feet, double walls, and roof packed with with eight inches of saw-dust. The thermometer stands very close to fifty degrees in here, whether warm or cold out doors, and never goes below forty, although the thermometer out doors has been twenty degrees below zero. The building has one double window with a ventilator on top. There are eight incubators, holding two or three hundred eggs each, making a total capacity of twenty-one hundred eggs or seven hundred weekly. This room is the best place we ever saw for keeping our eggs for hatching.

"The feed house is simply divided into grain bins, for different kinds of grain; it also holds a barrel of green bones, a bone cutter, clover cutter, and our barrel of kerosene is also safe here, for we never go in with a light, other than sun light.

"We also keep a team of all purpose horses. They work our farm (ten acres), haul our coal, wood, hay, sand, gravel, etc., besides making their feed doing outside work.

"We have tried to be brief, but see we have run on to considerable length. We could not do without the monthly visits of the POULTRY KEEPER. We think it truly practical, and may it and its managers live forever."

MR. PUGH'S BLACK MINORCAS.

We present an illustration of what may be said to be the true form of the Black Minorca. Mr. Emery S. Pugh, of Utica, New York, (whose advertisement is in our columns), sends us the cut because he objects to the use of illustrations that do not truly show the type of the breed. He wrote us: "The Black Minorcas are my specialty, and I do not wish your readers to get a wrong idea of them. Your last cut represents them with legs long enough for an ostrich." We then requested Mr. Pugh to forward us an illustration of his style of the breed, which is seen in this issue of the paper.

Minorcas are non-sitters, and stand at the head of all breeds for large eggs and plenty of them. They are also hardy, and, when first introduced, the eggs sold for as much as $10 per sitting. They have been greatly improved since then, and are now fully acclimated.

Mr. Pugh stands high as a breeder of Minorcas, as they are his specialties, but he also breeds Golden Wyandottes, Plymouth Rocks, Partridge Cochins and Pekin Ducks. He imports his Minorcas direct from England.

Since the Black Minorcas were first brought to America they have steadily gained in favor, until now they are one of our most popular varieties. They do not owe their popularity to any booming or special advertising, but to their genuine good qualities. No other variety can excel them in egg production, if, indeed any can equal them, and no other variety will produce eggs that will average so large.

Their large size, handsome appearance and remarkable laying qualities, make them great favorites with all who have bred them in their purity and highest excellence.

The illustration represents the true English style of Minorcas, viz: short legs, large bodies and fine form, and is a good representation of Mr. Pugh's strain.

LIGHT ON THE JAVAS.

The *Southern Fancier* comes to the rescue of the *White* Java in the following sarcastic language. It is "rough on White Plymouth Rocks." It says:

"Brer Jacobs "doubts if such a thing as a *White* Java exists." Mistaken idea. We have bred them, and recently. But they are White Plymouth Rocks, or White Javas, just as one chooses to call them. We had a few White Javas with good willow legs, and were sure we had the simon-pure. But on looking at a friend's White Plymouth Rocks, we found they also had willow legs, and that the birds could hardly be told apart. Java-shaped White Rocks are common; and, as the White Javas existed long before the White Plymouth Rock was born it is easy to get at the ancestry of the White Rocks. And, as the Barred Plymouth Rock was made from the Black Java, the conclusion is that the so-called White Plymouth Rocks are not Plymouth Rocks at all, but White Javas. In fact, we take issue with Brer Jacobs, and assert, without fear of successful contradiction, that there are White Javas, but no White Plymouth Rocks. Black Javas are quite extensively bred, and are a splendid breed and a vigorous one. Through all the years the Barred Plymouth Rock has been bred, its Java blood has dominated, and is just as dominant to-day as ever. But, call them by what name you please, White Javas or White Rocks, they are good fowls, as any fowl containing Java blood is bound to be."

The above well displays the absurdity of allowing two breeds in the Standard that are so nearly alike as the White Plymouth Rocks and the White Javas. As the editor hints that there are no White Plymouth Rocks we fear that he has been imposed upon, yet what he says contains a mine of truth.

KEEPING EGGS IN COLD WEATHER.

The first thing to do with eggs after they are brought into the house is to place them in cold water, fresh from the well, and allow them to remain for fifteen minutes. This reduces them in temperature without thawing them too suddenly. If they are frozen they may crack open, but some of them may be near the freezing, and not cracked. For this reason the cold water should be used. After removing them from the water wipe them dry and pack them in bran or oats, in a box, and keep the box in a cool place, but not where there is danger from frost. Turn the box over twice a week, which turns the eggs. The eggs will keep well for two months, and will hatch if kept six weeks, provided they were not frozen when taken from the nests.—*Mirror*

LOOK OUT FOR GAPES.

After the hatching season sets in there will be complaints that the chicks die of gapes. The difficulty is caused by minute, thread-like worms in the windpipe. They are supposed to come from substances picked up with the food, or from the ground hatching from eggs, as claimed by some, while others attribute the cause to earthworms. It is more prevalent on old farms, that have been occupied by poultry for many years, than on new localities, hence some keep the chicks on clean board floors until they are well grown, so as to be out of danger.

We give the following rules to follow, which we advise our readers to paste up, or save for reference, as they may find them of great help:

1.—Lime will destroy the gape-worm, hence scatter fine, air-slacked lime freely over the runs used by chicks, and do it often.

2.—Spirits of turpentine will destroy the gape-worm. A drop on a bread crumb twice a day, forced down the throat, has been found beneficial.

3.—Placing the chicks in a covered box, and pouring a little carbolic acid on a hot brick, so as to subject the chicks to the carbolic acid fumes, has been tried with success, provided that you do not suffocate them by doing too much.

THE TYPICAL BLACK MINORCA —FROM EMERY S. PUGH, UTICA, NEW YORK.

4.—Subjecting the chicks to the dust of fine lime, or of snuff, by first placing the chicks in a box, is one of the remedies.

5.—Inserting the tuft of a small feather in the windpipe, giving it a twirl, or twist, and quickly withdrawing it, is a well-known remedy, but it is too laborious to practice with a large number of chicks.

6.—A teaspoonful of spirits of turpentine in a quart of cornmeal, which is fed as dough, is one of the wholesale remedies recommended.

7.—Filthy ground should be avoided, and no food should be left over, as it will ferment, and add to the difficulty.

8.—Add a gill of spirits of turpentine to a peck of fine, air-slacked lime, and have it always ready for use.

9.—Keep affected broods away from those that are not attacked.

10.—Spade up the plot intended for the chicks, first dusting it *freely* with lime. After spading the ground dust with the mixture mentioned above, in No. 8. Dust *everything*,—coops, floor, hens, chicks, wall, ground, or wherever the mixture can be applied, and you will have then made the best attempt at a preventive of *gapes, lice and roup* known.

The above ten rules combine about all that can be offered to prevent or cure gapes. Anything that will destroy worms of any kind, will purify the soil, but do not use salt, unless in the form of salt and water, sprinkled, though lime water may be used freely.

LARGE FRENCH ESTABLISHMENT.

Mr. John D. Mercer, who is well known in Seattle, Wash., as one of the most experienced and enterprising poultryman in that section, thus writes to the *Western Fancier* in regard to large poultry establishments in France:

"We often read accounts of the large poultry farms of France and of the immence business they do. It is safe to say that nine persons out of every ten who read these articles doubt their truthfulness, and I will confess that I have always (until recently) supposed the glowing accounts published in many of our American papers simply matter used to fill up unoccupied space, but a few days ago I had the pleasure of meeting M. Legras, a former French poultryman, but now located in Idaho, and from him I obtained the following particulars concerning the poultry industry in France, where it is not considered a very wonderful undertaking to hatch and raise for market one hundred thousand fowls a year. M. Viotellier, at Seine in Martes, near Paris, turns out 200,000 a year; Roulier & Arnould, two miles southeast of Paris, 400,500; Barton Peters, two miles from Paris, 250,000; Leroy, fifty miles north of Paris, 100,000 per annum. M. Voiteller also hatches many quail. M. Legras further stated that he had hatched 47,000 fowls in nine months, and had made a profit of $7,000, and sold his place for $18,000. He also said the French only use 100 egg incubators and sell the chicks when three or four months old at from 60 cents to $1.25 each; old fowls sell from 75 cents to $1.50 each, and eggs at 20 cents to 40 cents per pound. Only the 100 capacity incubators are used; these are hot water machines without regulators. After hatching, the chicks are placed in a mother for two days and kept at a temperature of from 90 to 100 degrees and not fed for two days; after the second day they are placed in a brooder and reared without water.

"The above statements are hard for an American to believe, and from our way of looking at the poultry business, they do seem improbable, but they were given to me for facts by M. Legras, who produced books, etc., to prove his statements. The Houdan, he said, was the most popular fowl in France, but as a rule the French took but little interest in thoroughbred poultry."

We will state that many persons have visited France after reading of the large establishments in that country, but they failed to find them. As a rule, the poultry farms in France are small, and the great poultry production of France is due more to the fact that so many are engaged in poultry raising rather than to the large number kept by individuals. However, while we have no acquaintance with M. Legras, we know that Mr. Mercer would be the last one to make a statement which he supposed could not be corroborated by facts. The above is interesting, and really astonishing to us in this country.

A CASE FOR CONSIDERATION.

Week after week we urge our readers not to feed too much, and especially never to feed three times a day. One-half of our replies to inquirers are "your fowls are too fat," and yet it seems much harder on us to induce readers to believe that they feed too much than too little. Some readers do not seem to know when a hen is fat. With due respect to the gentleman who sent us the letter, here is a case, the letter being from St. Paul, Minn. The writer says:

"I have forty-nine pullets and ten hens in a barn 25x36 feet, (with two cows and a horse in it) running all together. One day I noticed one Light Brahma pullet soiled behind, and the next day it bent its head way down, jumped up and down like a rubber ball, and died. I couldn't think what was the matter, so I skinned and opened it. I found everything all right, so far as I know, except on each side behind the legs, and on both sides, where there was fat about one inch thick and three inches long. Was that the cause of her death? I feed ground feed and shorts, mixed and scalded, in the morning; about two quarts oats or wheat, in straw, at noon, and about three quarts of corn and two quarts of wheat, mixed, in the evening, but seeing them so fat I omitted the noon meal, and shortened the evening meal. They have sand, gravel and ground oyster shells. I think I am doing first-rate with the aid of your valuable paper. Some of my neighbors have 150 and more chickens, and get only one and two eggs a week. I started on January 1st with three eggs and got 364 that month."

The above is one among many similar cases. The hen was fed three times a day, on food that was very fattening, and she died from the effects of too much of it. She seemed healthy when examined after death, but the fat was two and three inches thick. We leave our readers to judge for themselves. The wonder is that the gentleman secured so many eggs, however. In that respect he was very fortunate.

WATERPROOFING COTTON CLOTH.

Those who are interested in knowing how to prepare cotton cloth so as to render it waterproof, should save the following, from the *Rural New Yorker*, which it gave as a reply to an inquirer:

"Several ways are practiced. One is to stretch strong cotton cloth smoothly on the frames, and then to coat it thoroughly with linseed oil, adding a second coat if desirable after the first is dry. We have treated frames covered with cotton cloth with linseed oil to each quart of which the thoroughly beaten yolks of two eggs had been added. Another coating highly recommended consists of one quart of linseed oil, one ounce of sugar of lead, and three ounces of resin. The sugar of lead is pulverized in a little oil, then added to the other ingredients. The whole is heated in an iron kettle until the resin is dissolved and all thoroughly mixed, when it is applied hot. It is said that frames thus treated will last several years if kept under cover when not in use. A German formula consists of two ounces of lime water, four ounces of linseed oil, one ounce of white of eggs, and two ounces of yolks of eggs; mix the lime and oil with a very gentle heat, beat the eggs separately and mix with the former. Spread this mixture with a paint brush over cotton cloth of a close texture, allowing each coat to dry before applying another, until the cloth becomes waterproof."

Waterproof cloth is excellent as a covering for the runs of chicks, as it admits the warmth and sheds the rain. Though not as durable as glass, or as good, yet it can be cheaply prepared, and also more easily applied to the coops or runs, as it may be fastened in place with straps or tacks, and in but a few minutes time.

DRIPPING FROM THE WALL.

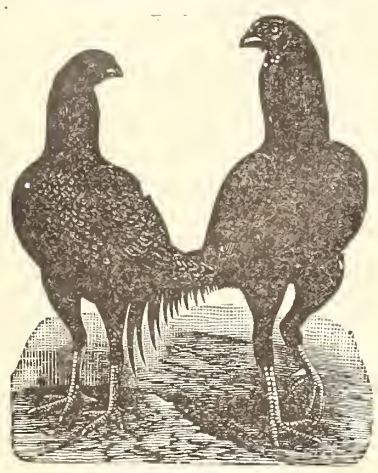
When a poultry house remains damp, and the water accumulates on the wall, it is not an easy matter to overcome the difficulty. In this connection we present a letter from Boston:

"I have written you once in regard to ventilation in hen houses you said not to put any in. Now I want you to tell me why my house sweats so, and if there is a remedy for it? I built my house 9x24 feet, four feet back and six feet front, of matched boards, and covered it with Neponsett paper, so that it is about as tight as you could make it. There is no ventilation in it except when I open the traps or door, but if I shut it up at night, in the morning I find the roof and sides are dripping wet, or sometimes it is all white with frost. Now, I think this is very unhealthy for the hens. Can you tell me of any remedy? I have one hen all wheezed up, and another with its eye swollen up. I have also killed one that had both eyes affected."

The house should be kept open during the day, and a lump of lime should be placed in each corner. Such difficulty usually happens mostly with *new* poultry houses, either the lumber containing moisture, or more readily causing it to accumulate. Old buildings are seldom so affected.

IMPORTED INDIAN GAMES.

The Indian Game has come to stay, and it will make a great change in the quality of our poultry. One of the first importers of Indian Games was Mr. P. A. Webster, Cazenovia, N. Y., and they are still his favorites. The illustration shows an importation from the yards of John Frayne, of England, at a great cost. The cock is the celebrated "Champion II," and the hen, "Young Queen of Fashion." They are beautifully double-laced. Mr. Webster has imported birds from England thirty times. The cock, "Champion II," is from "Old Champion" and "Queen of Fashion" hen. "Old Champion" is the finest Indian Game



IMPORTED INDIAN GAMES.
From P. A. Webster, Cazenovia, N. Y.

cock living. He has taken sixty first prizes in England, besides numerous specials, and on four occasions has taken special for best bird in the show of any breed. There is no better blood in existence. This cock, "Champion II," will head his yard for 1893. Mated with the grandest double-laced females, he cannot help but produce stock unequalled in America."

"Old Champion" has won prizes at Palace, Birmingham, Barnstaple, Chesterfield, Cardiff, St. Mary's Church and numerous other places. "Queen of Fashion" lately sold for £30, or about $150. She has been successful at Bath and West of England, Newcastle-on-Tyne, Chesterfield, Cardiff, Liverpool, Bath and many other places.

Mr. Webster also breeds Buff Leghorns and Blue Andalusions, importing them along with his Indian Games. He is the inventor of the celebrated Webster clover cutter and of the Webster and Hannum bone mill.

We have visited his yards in person, and know that his stock equals that of any other breeder, and he always aims to please.

CORN AND UNCLE MIKE.

The Fanciers' Journal seems determined to compel Uncle Mike Boyer to haul down his banner on corn. Uncle Mike claims that corn is just the thing to fatten fowls, but that it does not make eggs. Last month we visited him, and found him engaged in perusing an article from the *Journal*. Knocking the ashes out of his pipe, and putting on "that smile" for which he is famous, he handed us the paper, from which we take an extract:

"That awful soft corn was fed once or twice per day to the growing chickens. The latter had free range over a rich farm, and picked up all the insect and vegetable food needed, and the corn 'nicked in' beautifully."

"Now," said Uncle Mike, "don't you see how some people refute themselves. What I contend for is that corn *alone* is too fattening, and the extract admits my claims by the fact that the birds had *free range* over a *rich farm*, and picked up all the insect and vegetable food needed, and it also agrees that the corn 'nicked in' beautifully."

Then Mike read on until he got to the following, also in the same article in the *Journal*, and he became real angry—the smile vanished. Here it is:

"We have had enough experience in raising chickens at Hammonton, New Jersey, to prefer the winter and spring months for hatching and raising, to the summer months. After the first of June vegetation and animal life, except mosquitoes, are at a low ebb in that sandy section. We would not advise corn to be fed down there in summer. The hot sun might melt the fat it produces."

"Read that," he said. "Just to think that such a slander should be cast on this town. Here I have been trying for a whole year to get one or two mosquitoes to add to my collection, when the town is charged with being full of them." He made a vicious kick at one of his pedigreed collies, and said: "The editor of the *Journal* immigrated to this town after paying several visits for that purpose. He knows that it is a town of small farms, and that *fruit* pays better than grass. Nevertheless it is hard to keep the grass down, and, although the editor was in the dairy business before he came here, and had an opportunity to experiment on his cows, he abandoned the "business." Then, reading from the paper, Mike pointed to the words of the editor, and asked "where are now the cows":

"When M. K. Boyer speaks of feeding rations he treads on dangerous ground. We have had plenty of scientific rations to cope with in the past years when feeding cows, and have come to the conclusion that much of the theoretical stuff found in books might well be eliminated. The same applies to chicken feeding rations."

"And," said Mike, "just read this little squib. It makes me tired to reply to such nonesense." Here is the squib:

"In our five years' experience in New York State buying and selling eggs, we wish to state that the most and the best eggs we always found at farms where corn was a liberal article of diet. After many trials and experiments with all kinds of foods we found good wheat, bran and middlings and good yellow corn the best for milch cows, and found the hens did equally well on it.

"Nobody will say that wheat is a complete chicken food, yet the best results in a flock of Brahmas as to laying was obtained by feeding wheat only with the addition of ground meat scraps. This is a fact, not a theory."

"Well," said Mike, "he says nothing about *hay* for his cows. If he found good wheat, bran and middlings, and good yellow corn, the best feed for his cows, and also *gave hay*, I would like to know what else the "scientific feeding" is but just what he suggests. He also says that no one claims wheat as a complete food. Certainly—why did he not include corn. And don't the ground meat scraps 'nick in' beautifully in the last paragraph."

Then Mike put on his smile again, lit his pipe with a fresh load, and remarked: "I can stand all such logic without ruffling a single feather. After all, the editor has simply shown that corn, like all other foods, may be used as a part of the ration. I only claim that those who give nothing but corn will get no eggs, and when my opponents come forward they do not fail to forget and admit that if they feed corn they also feed *something else*." Then we left and felt that Mike knew what he was saying.

THEY DIED.

A reader of Richfield, Ill., has had an experience with raising chicks. He knows how to get a good hatch, but he has some curious methods in regard to raising them. Here is his letter:

"I will state that this is my first effort at hatching and raising young chicks in winter. I hatched by incubator ninety-four per cent. of the fertile eggs. I set the incubator December 19th, and twenty days after that they came out healthy and strong. The temperature varied between ninety-five and 106 degrees, but never remained long at either extreme. I used no regulator, and the weather was the severest of the winter. The thermometer outside stood ten degrees below zero the day they hatched. I placed them in a hot air brooder, that was attached to and heated with the same lamp as the incubator. I fed, at first, bread crumbs, then wheat, cracked corn, corn pone, etc.; kept sand and water in the run constantly, and also sweet milk. I fed them all they would eat for ten days, and about that time five or six began to grow weak in the legs, and their under bills became very soft, and drooped down. In a few days they could not pick up a grain of wheat, and finally refused to eat at all, and soon died. I first attributed the trouble to too much heat, and then to too much feed. I rubbed the legs with liniment, and even cut off the protruding end of the lower part of the beak, and in some cases they revived and one is yet living, but weak and "tottery." What in your opinion was the trouble, and what was the cause."

He tried to run the brooder with the same lamp from the incubator, and does not state if the brooder was top or bottom heat. Then, when the chicks got down in health he cut off the ends of their bills. As he did not give any facts about the temperature of the brooder, but explained more in regard to the food, he leaves us to *guess* the cause. It is our opinion that the chicks did not receive sufficient warmth. In very cold seasons a brooder may be as high as ninety-five degrees. No method of feeding will save chicks after they become chilled for awhile. We do not believe it proper to cut the bills. When the chicks reach the condition stated it is better to destroy them at once. A brooder must be good, and no chances should be taken with imperfect ones.

FEATHER EATING.

When fowls begin to pull feathers from each other they might as well be killed, as they seldom get rid of the vice, and lay but few eggs. On this point the *Poultry Bulletin* remarks:

"Are you troubled with feather-eating fowls? If so, try the following simple remedy. Procure at any drug store, five cents worth powdered aloes, and mix thinly with whiskey or brandy. Catch the fowls which have had the feathers pulled from neck or back, and with a small paint brush apply the above mixture to bare places and surrounding feathers. The taste thus produced is very offensive to fowls." Another remedy is a change of diet for the fowls with a slight increase of salt rations, also an increase of animal food. Fowls having a wide range seldom ever resort to feather-eating, but when kept in close quarters, enforced idleness will often prove an incentive to it."

The above remedy is worth trying, but we believe the better plan to be to catch the first hen noticed to be guilty, and remove her from the flock, as she will teach the others. The poultry bits made by W. H. Wigmore, 107 South Eighth Street, Philadelphia, have also been found useful. The cause is, as stated above, *idleness*. Industrious hens, which are not overfed, and not too closely confined, are seldom addicted to the vice.

GROWING THE GREEN FOOD.

What will you sow for green food in summer, and how will you manage to provide it for the hens? A letter from a lady in New York brings this matter up for consideration. She says:

"We have about a half acre of ground that we wish to sow to something to which the hens can help themselves during the coming summer,—something, whatever it be, that the grain or seeds will be good for laying fowls to work at. It seems as though oats and wheat were too tall to be reached easily by them. What do you think would be the best kind, or mixture. My fowls have a free range, but I have this piece of ground, which I wish for their special benefit, to work at as they please, and would like it as early in the season as possible, and also have it last during the summer."

The best early foods are oats and wheat. The hens can be turned on the green food when it is about *three inches* high, hence one does not have to wait for it to mature as if growing a crop. If it can be done conveniently, the field should be divided into two plots, so as to have the hens forage on one plot while something is growing on the other. Sweet corn, pop corn, sorghum, millet, Hungarian grass, and even kale, may be sown later in the season. Hungarian grass is excellent. Most of the plants will grow up again, and "stool," thus providing an abundance. As the crops only have to grow to the height of a few inches, green food can be had quickly and in abundance. To attempt to raise grass the first year would be too slow for the purpose.

CARE OF YOUNG TURKEYS.

The following is an excellent method of caring for young turkeys, being from the *Ohio Farmer*, and written by a correspondent, who says:

"The young turkeys may be raised by hens, or by the hen turkey, or even in brooders, with proper care and feed. The hen turkey is preferred, as she is more careful of the tender poults, and it has been my experience that they may be entrusted to her care when first hatched if the weather is warm and favorable, and if by chance the old turkey with her brood is caught in a passing shower, she will patiently wait until the sun dries the grass sufficiently before leading them forth. I have in mind a turkey hen which was allowed the freedom of the farm with her brood of nine young turkeys and were not fed during the whole summer, as they did not need it. They could get an abundance of insects of all kinds in their foraging over the hay and wheat fields. In the fall they had grown to be the best, or nearly the best turkeys we had, and were active and strong, and when matured were very fine birds. I should advise any one to let the old turkey hen care for her young, and only feed them at night so as to prevent them wandering too far away; but if you are obliged to place them with a hen, good care will be necessary in order to raise them. It suits old biddy better to remain near home, and if you make a practice of feeding her, she will always be found "on hand" at feeding time, and, as the young turkeys are easily tamed, they also become familiar and can be easily caught.

"When the young turkeys are first hatched they should be allowed to remain in the nest about twenty-four hours, then removed, and insect powder dusted all through their down, also on the mother hen; dust the powder all through the fluff, under the wings and at the roots of the tail. This will kill all the body lice, providing good powder is used.

"The best food for them for the first two weeks is hard-boiled eggs chopped fine and mixed with oatmeal or bread. This is a highly concentrated food and supplies just what they need. After they are two weeks old, feed cracked wheat, oatmeal and cornmeal cakes. These cakes should be made of cornmeal and water, or better still, buttermilk or milk, mixed into dough, then baked; when done be sure to turn the cakes out and let them steam. This will prevent the outside drying too hard and none will be wasted. The above method should be followed until the turkeys are two months old. After this they will forage for themselves, and will need only their daily feed of whole grain.

"The young poults are very tender up to the age of four weeks. Be sure to place the hen in a clean, roomy coop, with a small run in front, and let them run in this all they please, but do not allow them out when the dew is on the ground or after a rain. The brood should be kept shut up in the run for about ten days, then allow them their freedom, but always shut them up at night. Be sure to feed them well all summer and you will surely have some fine turkeys in the fall to repay you for all work."

The point in the raising of young turkeys is to guard against the large *head* lice which pass from the mother to the young. One or two drops (no more) of sweet oil should be rubbed on their heads when they are just hatched, and also once a week thereafter, as well as on the hen. Bear in mind, also, that the least dampness is fatal to them. Water can be given only in a manner to avoid having them get wet.

CAPONS FOR MARKET.

You must begin a year ahead to get good capons, and they must be hatched out just as early as possible. Select a dozen Brahma or Cochin hens and mate them with a colored Dorking male (or a grey Dorking, if preferred), and put the eggs under the first hens that become broody. Procure your male now, so as to be ready. When the capons so produced reach the market next year you will have them large and get good prices.

THE PLYMOUTH ROCK "EUREKA."

We present an illustration of the Plymouth Rock cock, sent us by Mr. O. P. Phillips, Amo, Indiana. Mr. Phillips is Secretary of the Hendricks county, Indiana,

BARRED PLYMOUTH ROCK COCKEREL "EUREKA."
From O. P. Phillips, Amo, Indiana.

Poultry Association, and breeds Barred and White Plymouth Rocks, and Brown, White and Buff Leghorns. Some of his birds have scored very high. At the Indianapolis show on Brown Leghorns, he won first and third on both cockerel and pullet, and at the Hendricks county Poultry Show, Danville, Ind., December 19th to 23rd, 1892, B. N. Pierce, judge, he won on Brown Leghorns, cockerel, first, second and third. Score 95½, 95, 94½. Pullet, first, third and fourth. Score 96, 95, 95. Pen, first, 95⅜; second, 94 9-16. Special for highest scoring pen, any breed. Special for twenty highest scoring birds, any breed. Barred Plymouth Rocks, pullet, second and third, hen, fourth, pen, third. White Leghorns, hen, first, second and third; cockerel, third.

FOUL AIR NONSENSE.

It is strange how some persons worry themselves over imaginary troubles. In the *Fanciers' Review* several subscribers have been discussing ventilation and foul air. One writer says:

"Foul air is heavier than pure. Foul air settles along the floor of the hen house and does not rise, does not move in fact except as disturbed, and then it presents, if it could be seen, the appearance we would have presented by two liquids not disposed to mix quickly, one much heavier than the other; the lighter carried on top and both undulating like the waves of the ocean."

So many have held up the expression "foul air is heavier than pure," and "settles along the floor," that it has been accepted without discussion. The fact is that *some kinds* of foul air are heavy and some not. Smoke is foul air, gas is foul air, and the exhaled air from the lungs is foul air, all of which are *lighter* than the air. *Pure*, unmixed carbonic acid gas is heavier than the air, but it comes from the lungs diluted with about four times its volume of nitrogen, and *never settles along the floor.*

Again, the air given off from the lungs is warmer than the air of the atmosphere, and rises. But a fraction of such air is carbonic acid gas, and the *pure* gas can never settle on the floor as long as there is the slightest motion of the air of the room. Only in deep wells, after a slow and long process, with the atmosphere perfectly still, does such gas accumulate, and even then the well will be found to be but partially full.

There is enough carbonic acid gas in the atmosphere around us to cover us several hundred feet deep if it "settled to the bottom," but fortunately such is not the case. It does not separate from the nitrogen but mingles with it, uncombined with it, however, and that which comes from our lungs is mostly nitrogen, for with every inspiration of air we take in but one-fifth oxygen, the other four-fifths being nitrogen. Another writer in the same journal says:

"I think the best way to ventilate the poultry house is to make a box 4x4 inches, let it come down through the roof to within one foot of the floor. Put a damper in the lower end to open or close and eight inches from ceiling cut two holes 4x4 inches on opposite sides and hang the pieces with hinges so they will open or close. This gives top or bottom ventilation by opening one and closing the other."

Would it not first be better to find out if ventilation is *needed*. If the poultry house is lathed and plastered, and made as tight as possible, there would be some necessity for endeavoring to find out how to ventilate, but the ordinary poultry house is not tight, and cannot be made tight enough to prevent the cold air from coming in. The proof of this is that frozen combs result on very cold nights due to the cold air that comes in.

This foul air nonsense has stood long enough. It is not the first time that the POULTRY KEEPER has upset some time-honored theories, and we now boldly come forward and say that the air expired by creatures does *not* settle to the floor or to the ground.

DISTEMPER IN DOGS.

There is no specific remedy for distemper in dogs. Early in the disease emetics and catharties exert a favorable impression on the irritated mucous membranes, which are generally affected. Calomel and tartar emetic, each, in half grain doses given on meat or in thickened broth, will prove emetic and laxative. This may be followed in a day or two by a powder of digitalis, half a grain, and a scruple of niter, twice a day for two days. At the expiration of a week the emetic, as above, may again be administered. In the dog, vomiting is nature's safety valve against disease. The operation of an emetic, therefore, seems more efficient in canines than in any other of the animal species. When the dog is very much debilitated, tonics, as iron, and stimulants in the form of beef soup with ale or porter in it, given in quantities of a wine glass full three times daily prove beneficial. It is a good preventive measure to breed from only families of dogs that seldom or never are affected with distemper. There are some breeds almost exempt, while others succumb early in the attack. The shepherd dog, when attacked, is but little affected, the disease lasting but a day or two,, or only a few days at the longest. The terrier suffers far more, and especially the white terrier. Next in order of severity comes the hound; and then the setter; both the setter and the spaniel have the disease severely, and the fatality in the pug is next to the Newfoundland. Unacclimated Northern dogs are swept off by the disease. Foreign in-and-in bred dogs are especially liable to distemper and malignant diseases. —*American Agriculturist.*

GENESIS OF EGG SHELLS.

S. S. BARRIE, MONT VALE, N. J.

Calcium, Ca., is one of the most widely diffused of all the metals. It is a constituent of nearly all foods. Calcium and oxygen combined form lime (CaO).

Poultry paragraphers as a rule tell us to give our hens lime in some form to provide material for egg shells, while some believe that lime water only is available for the purpose. Now, so far as egg shells are concerned, it is immaterial which is fed, for water does not decompose lime; true, it becomes invisible in water, but it is simply held in suspension, and may be precipitated. However, it is not the oxide (CaO) but the carbonate (CaCO3) of which egg shells are composed, therefore we will use our lime for whitewash and turn our attention to CaCO3. It is an established fact that the blood is the medium for all physiological development. It is also a physical fact that inorganic compounds cannot be converted into animal texture. CaCO3 is an inorganic compound, and before it can be assimilated by any animal, bird or fish, it must first be decomposed. Sulphuric acid is one of the most powerful solvents, yet this will not decompose CaCO3 except by forming two other compounds, neither of which relate to egg shells. The sulphur and oxygen of the acid, combine with the calcium of the carbonate forming the sulphate called gypsum, while the carbon and oxygen of the carbonate combine, forming carbonic acid.

To decompose a compound requires force exceeding that of its molecular attraction. There are no acids or other forces within the bodies of hens competent to decompose CaCO3. If there were they would not only decompose the egg shell as fast as formed, but they would speedily decompose the hens. Fowls drink water, but this compound of oxygen and hydrogen simply performs the functions of a conveyor, and is neither assimilated or decomposed, yet carbon has twice the combining power of oxygen, and four times that of hydrogen.

When a builder proceeds to erect a building, he first gets his bricks, lumber, nail, etc., on the ground. When a hen proceeds to build an egg shell she procures the calcium, the carbon and the oxygen from ordinary foods through the blood, and the compound is formed within the reproductive viscera. Of course this action is altogether chemical, and involuntary on the part of the hen. The egg shell is built up by the force existing within the atoms of its constituents. The oxygen of the air is inhaled in the act of breathing, the carbon from the blood combines with the inhaled oxygen, forming *within the body* the compound carbonic acid which is exhaled. The rapidity with which the solid atoms of carbon and oxygen clash together, in uniting, produce heat the same as in burning coals. Suppose carbonic acid passed through the blood to the lungs, inhaled oxygen would not combine with it, for the carbon is already saturated with oxygen. Or, suppose carbonic acid to be inhaled, the result would be death in either case.

Ordinary experiments are untrustworthy, for the reason that they are, in the main, superficial. Because one cow, fed with a continuous liberal ration of bone dust, should happen to have longer horns than one fed with wheat bran, the conclusion that phosphate of lime had been transferred bodily from the manger to the horns would be fallacious. Physical facts are not to be controverted by sportive methods or by heritary practices.

[In the above CaO means lime, and CaCO3 means carbonate of lime.—ED.]

A GREAT CURIOSITY.

J. F. SANFORD, RUTHERFORD, NEW JERSEY.

As the POULTRY KEEPER is said to be edited and published for the benefit of its subscribers, and as I have been a subscriber since before it moved from Chicago, I take the liberty of sending the following, which may be of interest, and which I will ask you to explain. We keep a few hens which my wife takes most of the care of. She brings in the eggs every day, and on one day one of the number seemed to be rather thin shelled, so that her thumb made an indentation in the shell, and she laid the egg on the top of the others in order to use it first. This morning, when about to make a pudding, she broke the egg to put it in the pudding, and was much surprised to find within it an embryo chicken, fully an inch or over in length, with head and body nearly formed, which could be distinctly noted, and the eyes and bill could be very plainly seen. The egg was layed and brought in on the same day, and had been kept in a closet where the temperature probably was not over seventy degrees, for less than four days. I have put it in a bottle of alcohol, but as a portion of the white of the egg held fast to it, it does not show as plainly as when in the dish into which it was broken. I will label and keep it as a curiosity.

[It may be possible that the egg had been in the nest and was mistaken for a fresh one, but as Mr. Sanford is sure of no such mistake, the circumstance is another of those "problems" that sometimes occur to puzzle all. We confess that we are unable to explain it.—ED.]

BUTTER AND EGGS.

P. S. ESTEE, AMIRET, MINN.

Living near here are two farmers. One of them turns his attention to butter-making, while the other raises a large number of well-bred fowls. The butter man has six cows, and they are given the best of care and feed, and their owner makes $1.25 worth of butter each day, and thinks he is making money. Now, every morning and night each cow receives a large pail of ground corn and barley, mixed. This, at market price, is worth seventy-five cents. The hay is fed three times a day, and is worth twenty-five cents; thus the cows consume $1.00 each day, leaving but twenty-five cents for the owner's care and trouble. How much money does he make? The egg man has 150 hens which lay an average of fifty eggs per day, value about $1.20. He feeds, each day, one bushel of mixed corn and oats, at a value of thirty cents; soft food, value fifteen cents; meat, shells and milk (which he gives them in place of water), ten cents more. Now, the time consumed in caring for the fowls is not half that which is consumed by the butter man in caring for his cows. We will, however, allow for it the same amount as for the time of the butter man. This makes a total of eighty cents, leaving forty cents clear profit for the egg man. Who is going to waste time and stable-room on cows that do not yield half as much profit as hens would if kept in the same room, without near as much feed as the cows require. The POULTRY KEEPER is a good paper and has my best wishes for success.

GRIT AND WORK FOR HENS.

L. M. ROSE, CLAY CENTRE, KANSAS.

I have taken the POULTRY KEEPER two years now, and shall take it as long as I keep chickens. I did not know I was so ignorant about poultry until I commenced to read the POULTRY KEEPER. I have been raising chickens for ten years, but was not making a regular business of it. I have learned by experience that almost all the diseases of poultry are caused directly or indirectly by lice and lack of grit. I have now seventy-five hens, and the way they eat broken glass and earthenware, or any kind of crockery—! Were a person looking at them eating at the stone when I am breaking this stuff up, he would think they never ate anything else. They seem to make a meal of it. Some of my neighbors say their hens won't eat broken dishes, but I think it is because they do not break it fine enough. I feed about two quarts of wheat (scattered around in straw, to make them work) in the morning, one day; and two quarts of oats the next, with nothing for dinner, except some days when I give them a few small potatoes to pick at; and all the corn they will eat at night; and water the first thing in the morning. If the mornings are cold I notice that they relish a drink of clean water the first thing, and next grit, and then they go and scratch for their breakfast. We do not lack for eggs, I can tell you, and a happier lot of hens would be hard to find.

THE WOODEN HEN AHEAD.

U. E. LOY, LONGLEY, OHIO.

Our brother at Covington, Ky., seems to think that the hen is far ahead of the incubator and brooder in regard to hatching and raising chicks. Now, I can't agree with him on that point. I have an incubator made after the POULTRY KEEPER plan. I put in 100 eggs for the first hatch, tested out ten on the seventh day that were infertile, and hatched out eighty-five good, healthy chicks, and raised all but one in a brooder, bought of G. S. Singer, of Cardington, O., and they did better than if they had been running with hens. Incubator chicks are always free from lice, too, when hatched and raised that way. I have had several hatches in the past year; from eighty to ninety per cent. hatched, in a 200 eggs size incubator. I have now fifty hens and pullets, all hatched with the wooden hen except five, and I can see no difference in them at all. In fact, I don't intend to allow any more feathered incubators to set, as I don't think it pays, for while Biddy is attending to family duties she could be laying. My experience is that they will hatch just as well and grow just as fast by artificial means, and with less trouble, than if natural methods are pursued. I think if the brother will watch his incubator closely he will find it will do good work, and if he will purchase a good brooder, and follow directions in the POULTRY KEEPER, and use a little judgment, he will come out victorious.

GOOD RESULTS IN MANITOBA.

G. MITCHELL, WINNIPEG, MAN.

I have been taking the POULTRY KEEPER several months and never was so well pleased with any poultry paper. I have thirty-five hens, of a mixed breed, and I am now (in January) getting a dozen eggs a day since they commenced to lay, and we have gotten twenty-nine dozen since Christmas, selling them at forty cents per dozen. I think they are doing very well for Manitoba. I would say more but time presses at present I will sit down and write you something some day. I have an incubator and brooder. Last year I hatched with it. The incubator is all right if you know how to run it. My greatest fault was chilled eggs, as they were brought to me when the thermometer was at zero outside, and they were not wrapped up well enough.

AN EXPERIMENTAL INCUBATOR.

H. F. BRANCHLE, BETHLEHEM, PA.

We have made an incubator according to POULTRY KEEPER plan, not very large, as it holds eighty eggs. In order to try it we put in a dozen eggs and got five chicks, of which one died. The remaining four are as healthy and big as one wishes to see. We raised them in a Harper brooder, made as described in your issue of August, 1891. Many persons tried to discourage us when we made the incubator, but we showed them that such a "Hinkel Breecher" meant business when set in motion.

The October, 1886, issue saved us several dollars. In looking over it we saw Mr. Cornell's letter concerning the "common sense" incubator. We were about to try it, but changed to the one on your plan. A friend of ours made a "common sense" incubator, spoilt 400 eggs, and then gave it to us.

We started raising chickens several years ago, with five hens and one rooster, and now we have about thirty-five, which are made up of Brown Leghorns, Light Brahmas Plymouth Rocks and Dunghills. One coop is plastered and the other is lined with tar-paper. Our yards slope to the west, hence we must build coops in the terraces. This spring we will try our luck with ducks, as water can be had and so much is written in favor of ducks.

A POINT ON FEEDING.

ANDREW BRENNEL, JR., ZANESVILLE, OHIO.

I have been a reader of your valuable paper for a little over a year, and would not be without it for twice its price. The following is an article on feeding and caring for poultry. In the first place many failures are caused by lack of attention. At this time of the year, when the weather is cold, a warm coop should be provided for them. There has been a great deal said about feeding, what to feed, and how often. Chickens should be fed very early in the morning, and just before going to roost. The following mode of feeding I have tried with satisfactory results. In the morning, equal parts of small potatoes, turnips, onions and beets, which are thoroughly cooked and seasoned with salt and red pepper, and thickened with middlings. In the evening, grain is fed, consisting chiefly of corn. They are kept constantly going during the cold weather hunting for the grain, which is thrown in leaves prepared for them. Cabbages are hung suspended from the roof for them to pick at. Chopped bone is given them two or three times a week, also fresh water twice a day. Plenty of grit and oyster shell is given them.

VENTILATION AT ZERO.

L. B. GANGER, CELINA, OHIO.

I noticed in the January POULTRY KEEPER, the article of Mr. Thos. Sanders on ventilation in poultry houses, which is all very well in season. I notice that he keeps the Andalusians, and it may be that they can stand more ventilation than other breeds, but I should like to have seen where he had them on the morning of January 15th as my thermometer was sixteen degrees below zero. I keep single-comb Brown Legborns, and my rooster had his comb frozen. I would like to know what kind of a house to build to keep a Leghorn from freezing his comb in such cold weather without heating the house in some way. As I have my poultry house it is as warm as I can make it without putting in a stove. Now, I would like to know how to build my new poultry house this spring, to have a room in it so as to keep my fowls warm when the thermometer is below zero. I prefer to read something about how to keep the hens warm during the cold days. I don't care much for ventilation in winter, but we all know that it must be given in warm weather.

MR. McCORMICK'S POULTRY HOUSE.

C. F. M'CORMICK, LEWISTOWN, PA.

Mr. J. Merrill, Krouzburg, South Dakota, says he cannot well understand my poultry house. It is twelve feet wide, thirty-six feet long, with entry across the twelve foot way. This gives me one pen on each side of the entry in place of two runs, and my house stands east and west, with two windows in each run and one window in the south gable end. Now, he says, I feed "grass in the winter season." I said "I feed lots of *green* food," such as cabbage, etc., in winter, and grass in summer. I give steamed hay in winter, cut fine. This makes the hay like grass. My pens are 12x14 feet, one pen on each side of the entry, as the POULTRY KEEPER had it. I hope this will be of some use to Mr. Merrill, as I am a railroader myself. I made a mistake in saying that I had one window on the *east* gable end. It should be *south* gable end. If Mr. Merrill doubts my statements about my chickens laying so many eggs I can produce the figures, and figures do not lie.

THE PAPER IS FOR YOUR INTERESTS AND EACH READER SHOULD DO HIS UTMOST TO INCREASE THE CIRCULATION, BY GETTING NEW SUBSCRIBERS.

THE COW AND HEN COMPARISON.

J. B. M., HOWELL'S DEPOT, NEW YORK.

I like your paper very much, and would like it still better if your writers would get down to facts, without quite so much gush. There are too many axes to grind, and I find the novice has to do all the turning. It was said of Paul, "too much learning hath made thee mad," and I think the one that wrote up the "Cow and the Hen," taken from Otsego *Farmer*, is in the same boat. He says that a cow will produce 730 gallons of milk, 260 pounds of butter and a calf in one year, worth in all $208. He sold all of his milk at five cents per quart, a pretty good price. I have it delivered at my door, in bottles, for four cents, but I would like to know how he got the 260 pounds of butter when the milk was all sold. I would think it a good cow to average ten and two-thirds quarts of milk per day, for nine months, and allow the other three months for rest and the calf. He had better send some of those cattle down this way, as they are needed in Orange county. Now for the chicks. He says they will average 125 eggs each, and also raise ten chicks each in a year. Pretty good for mongrels that can be bought for fifty cents a piece. And he says that the eggs and chickens will be worth $432.25, but I would like to know where he got those 1,300 eggs that he set. I find that they were worth $18.95, and I think I can safely say that he, nor any other man, has, or will ever get, fit for market, in ten weeks, 1,000 chicks from 1,300 eggs, and if he raises 700 of them he will do well. So there is $75 more to be taken from those large profits of $232, which leaves $148.05. And taking that butter, which he made only in his mind, from the cow, whose profit was $156, we have left $104, leaving a balance of $44.05 in favor of the chicks. And now, I would like to ask him which he would rather do, prepare and care for one cow, or 1,100 chicks? Will $44.05 begin to pay for the difference in labor?

KNOW WHAT YOU ARE DOING.

E. G. STAPLES, HESS ROAD STA., N. Y.

We very often hear a great many people say, "Hens don't pay," and especially this is what a large majority of the farmers will proclaim. And why is it that they say this? It is because nine out of every ten don't know what their income amounts to. They never keep an account of what they sell, or use at home. They will carry their eggs to the grocery, and purchase two or three articles with the eggs, and what amount is left they will take in sugar; and a great many never inquire the price paid for their eggs, and then they say the hens eat more than their necks are worth. They don't know what they are talking about, when they say this. If they would only keep an account, they would not condemn their fowls as they did before they kept an account, but on the other hand they will increase their fowls, and take more interest in them. I keep an account of the date, number of dozens and price of all eggs sold, and also the number of hens kept. I can turn to any month in the last three years, and tell the number of dozens sold, and the prices obtained for the same. In 1892 I sold from forty-six hens, $57.96 worth of eggs alone, and I think the eggs used at home, in a family of six, and the poultry sold, as well as the young stock that I have on hand, has amply paid for the feed that the forty-six hens and roosters have consumed. Now, this is nothing great, but I think that if every person who keeps poultry did as well they would not condemn the poultry fraternity as some do; so I say long may it wave.

FROM OLD KENTUCKY.

THEO. CAMPBELL, LEXINGTON, KY.

Have long been a subscriber to the most worthy POULTRY KEEPER, but have never seen a line published from this famous blue grass region, the home of the thoroughbred, where more pure bred stock is raised to the square acre, than in any place on earth. We are situated midway between the cold and freezing north and the sunny south. We have a temperate climate, and our celebrated blue grass is fresh and growing the year round. We have the fastest horses, the best Jersey cattle, the heaviest hogs, the finest sheep, and our poultry is equal to the world's best, although it is only within the last few years, by the aid of the POULTRY KEEPER, that our people have become interested in pure bred poultry, and now they are breeding the best that can be produced. Several of our fanciers have paid as much as $50 for a single fowl, and one bought a trio in England, at the long price of $150. We have a thriving, prosperous poultry association, and some of the members are leading stock breeders. Prof. M. A. Scoville, of the State College Farm and Experiment Station, is an enthusiastic member, and is breeding and experimenting with different varieties of thoroughbred fowls. The writer is secretary of the Kentucky Poultry Association, and is breeding poultry for pleasure only. He has for years been experimenting, and has produced by scientific breeding, and careful mating, a rose comb Black Minorca. This fowl is not a sport, as the writer does not believe in such freaks. Some of our best fowls, be Wyandotte, Plymouth Rock and the Rose Comb Leghorns are specimens of careful breeding, not sport. I have neither fowls nor eggs for sale, and am a fancier from my love for pure bred poultry only.

POULTRY IN FLORIDA.

C. Y. MILLER, LEROY, FLA.

In vain I look the POULTRY KEEPER over every month to see some article of information on poultry from some breeders here in Florida, but up to the present no one has given his ideas, and therefore I have almost come to the conclusion that I am by myself, lonely engaged in the breeding of poultry. I therefore take this liberty of writing this letter to my best friend, the old reliable POULTRY KEEPER, which has given me more practical information than any other paper I read. It is now nearly five years since I came here to Florida, and I am, of course, in full blast with the poultry fever, but I allow that I could not find a thoroughbred fowl in fifty miles all around me, and to obtain them I had to send to the far distant States to get stock from reliable breeders, and as I intended to have them first-class, of course good prices I had to pay. Besides, sometimes, the expressage on a trio of some breeds would cost me from $6 to $8, but nevertheless I intended not to be outdone, and now to-day, on the 20th of February, as I sit on the front porch writing this, and in my shirt sleeves at that (as we are having most delightful weather here already), I am proud to see the young broods of turkeys, chickens and ducks. I can't say young geese yet, but I will have some young ones of them, too, pretty soon, as I set one of them on her litter of eggs, fifteen in all, on the 17th of this month. Now, of course, some of my northern brother breeders will say, "Oh, bosh; that can't be so"; but I can prove it. Come and see, for I shall be glad to show you one young brood of turkeys, hatched on December 24th, one on January 11th, one on February 3rd, and I have now three turkey hens sitting on fifty-five of their eggs. Therefore, I say to you all, come over and try it here for yourself, in this fine land of flowers, as I candidly believe poultry pays better here than anywhere up north. I sell my turkeys here, in the market of Ocala, at twelve and one-half cents per pound, gross chickens, small breeds, for thirty-five cents each; large breeds, fifty to seventy-five cents each. Eggs range from fifteen to thirty-five cents per dozen, and I never have known them to be less than fifteen cents per dozen in the market. Another great thing here is that we have green oats, turnips, and ruta bagas, in the midwinter, and in place of this you have snow and ice. Our chickens here lay all the year around, and our feed doesn't cost us one-half as much as yours. Our houses don't have to have cemented floors, tarred roofs and air-tight walls. My houses, 10x16 feet, cost me, complete, about $5 each, therefore I don't see why more don't engage in the poultry industry here. Of course you need not expect the original Florida cracker to do it, for he depends on his little orange grove, and a few mongrels are good enough for him. Now, at last, I must say to you, Mr. Editor of the POULTRY KEEPER, if my letter don't find its way in the waste basket tell your readers that I shall be glad to give them any information I can if they decide to come and help me boom Florida in the poultry industry.

FEED FOR YOUNG CHICKS.

M. W. CURRIER, SALISBURYPOINT, MASS.

To those who complain of losing their young chicks, and inquire how to feed them, I should like to reply, giving my method, which we have found quite satisfactory. The first feed given consists of one hard-boiled egg, and about one-half teacupful of finely rolled cracker, thoroughly mixed with the hand. The second day I bake an "Indian cake," after the same recipe I use for the table, with the addition of two tablespoonfuls of fine bone meal. This they eat readily, and grow rapidly upon it. We feed it for three or four weeks, or until they are old enough to eat coarser food, such as cracked corn and wheat. It has this advantage over raw cornmeal, that it will keep over night, does not become sour, is not sticky, and is ready at all times.

We raise from fifty to seventy-five chickens each season, rarely have a sick one and never a case of bowel complaint or leg weakness among them while feeding in this way. They grow steadily right along, and are quiet and contented.

Chickens must have a rich food in order to grow flesh, bone and feathers at the same time, and we believe, from our own experience, that a good start during the first three or four weeks of a chick's life manifests itself later on in increased size and early maturity.

SETTING A TRAP FOR "VARMINTS."

B. HART, FERNWOOD, OHIO.

I have been troubled with "varmints" very much, but I have now got ahead of them. I have my coop tight; then I cut a hole six by six inches. I then make a box two feet long, eight inches square, and nail lath on two sides, on one end, and on top, half an inch apart, leaving the bottom and one end open. Put the open end of the box to the hole in the coop, and put a door on the hole to the coop. When I shut the chickens up at night I open the trap-door, and when I open the coop door in the morning I shut the trap-door. You can keep the trap set all the time. I catch every comer, minks, foxes, pole-cats, opossums, and every thing of the "varmint" kind.

WINTER LAYING.

A. W. KINNEY, YARMOUTH, NOVA SCOTIA.

The POULTRY KEEPER comes to hand regularly, and is not read more carefully by any of your readers than the writer. From it has been gleaned information that, together with some original experiments, has assured me that a Poultry Farm can be run in good shape, with less than half the labor that is usually taken. It is hoped that we have about got through with the coldest and most stormy winter that has occurred in this country during the past sixty years. And it has given my "cold dry feed system," a severe test. The results from fifteen pullets, during the past two months, thoroughly proves its worth.

Along in the month of December there were fifteen June pullets started to lay, and in January they shelled out 240 eggs. This was fairly good, but not up to February, by considerable. The first week in February I "braced them up" a little more, shook out their crop strings, and gave them full swing for this month. To-day is the 28th, when a tally was taken, and I found the fifteen have laid just 362 eggs in twenty-eight days. Nearly an average of thirteen a day in the time. This is doing pretty well, but not yet what I want.

I shall pick the best from this flock, from which eggs will be taken after they have been mated with a cockerel that kicked off the shell in August last, after being under the mother hen nineteen days, and is as smart as a steel-trap; the chicks from these parents will, or must be trained to lay every day for thirty days, without a stop. This is my goal. I believe I have the proper feed, and now I want the fowls that will turn it into eggs the quickest. One little bird, that only weighs three pounds, in this flock, has laid twenty-four eggs in the past twenty-seven days. She is seven months old, a cross between White and Brown Leghorn. Her chicks ought to be something wonderful as layers. They will be around in twelve months, and we will see how they will work.

My flock of one hundred head, in the fall, has been reduced to fifty now, by killing off the males and poor ones. Thirty of these were late hatches—August and September. They will be due in a few weeks. The fifteen that have laid during the last two months have fed and clothed the whole lot of fifty, and cleared a profit of $2 per week, eggs being thirty cents per dozen, cost of "dry feed" forty cents per week. This is for fifty hens. When the whole fifty gets to laying, if the average holds the same, I should have three dozen daily. And if the price keeps up a few weeks longer, I will have over $5 each week, clear, from fifty fowls. This would give $10 per week from one hundred. And why not?

It has been a very much harder task to find the proper feed for the hens than it will be to get the right hens for the feed. My flock is now of the "mongrel" variety, but I find some of the Light Brahmas are doing as well as the Leghorns. The Brahmas are my choice, and some of your advertisers are going to get an order from me this quarter, very soon, for a small flock of pure bloods.

In a year or two, of sharp "culling," I want a flock of Light Brahmas that will weigh eight pounds each, at seven months old, and from then on, lay daily, for months at a time. I clearly believe that this can be done.

AVOIDING MISTAKES.

G. M. WILSON, NEBRASKA CITY, NEB.

I made up my mind to try and write another article to the POULTRY KEEPER, in the correspondence division. It may be of interest to those who are interested in seeing mistakes made, and then hearing from them, after they have begun on the successful line. My first year with an incubator, was nearly the whole of last year. As Mr. Pattie says that he "has had trouble with the rats;" so, in the same way, I have had trouble with the rats. The reason why the rats get into my brooder is that the bottom is all open, so that they have full access. But my mother has promised me that if I can only operate my machine, so as to have one hundred chicks hatch from that many eggs, she would help me fix the brooder so as to keep the rats out. But this year I am hoping to be able to avoid making any mistakes, so I expect to have better results than I have ever had before. I believe that to be a fact, which the New Hampshire *Mirror*, has stated in its article. I agree with the *Mirror* in regard to keeping the door of the incubator closed. But, Mr. Jacobs, I wish to ask you if the plans spoken of are safe to follow in regard to not putting in any moisture until the eggs begin to pip. I suppose you would like to know how I am feeding the flock of hens that I now have. I feed them corn in the morning and evening, during the cold weather; then, during the warm part of the day, I give them a kettle of bran and shorts. Just as soon as I can have all the way from seventy-five to one hundred chicks hatch out, then, my folks are willing to let me send away and get eggs from those parties that have eggs to sell. I know full well that I shall be glad when I can get along without making so many mistakes. Of course, you know it must make one feel almost discouraged to fill a machine and then lose nearly every one.

A SUCCESS.—What? A small ad. in the POULTRY KEEPER. Big results.

KEEPING THE WATER WARM IN WINTER.

S. J. BISHOP, CHESHIRE, CONN.

This is my fourth winter in egg production, and while this has been the most severe of them all, and while eggs have been high and very few, persons that I know have had a large abundance. My own hens, on the other hand, have done excellent. For instance, last winter, in December (the worst month in the year, perhaps, to secure eggs), mine did not more than half pay for their feed, while this December they more than doubly paid for it, doing nearly as well in December and January as in the last spring months. This is decidedly encouraging, for if one can secure eggs enough from May 1st to February 1st to pay for feeding, they are sure of some profit the remainder of the year, while if they actually have a profit these months, the business ought to be in every way satisfactory. The general lack of success in winter could in no way be indicated more plainly than by the price of eggs, which for some weeks this winter was forty-five cents in this vicinity; for with all the increasing interest in poultry, the production of winter eggs does not seem to be on the increase.

My own success I ascribe to several reasons. First, and perhaps the most important, is my success last season in securing some Leghorn stock that had been bred for the last ten years for egg production alone, and not for fancy show points. Second, I gave a larger variety of food than formerly, and plenty of it. At night I feed corn and wheat, enough so that a little remains for the first early risers who may chance to be up before I am. Another most simple and helpful arrangement is my plan for preventing the water dishes from freezing when the mercury is ten degrees below zero. As the lamp I use is good for incubator or brooder work, very simple and cheap, I will give it. First, I bought one dozen lamp-burners for $1.00, and then one dozen common two quart tin pails, at ten cents each. In the lid of these I mark a circle, and with a cold chisel I cut out a hole a little smaller than the former, then bent the edge upward and outward until the burner enters it, and soldered it on the inside. I make a chimney of sheet iron, with a hole about an inch square, for isinglass, to see the flame. You then have a lamp complete, costing less than twenty-five cents. Now, to keep my drinking water warm, I place it in tin pans on the ground. Under each I dig a circular hole, large and deep enough to place a lamp. All I then need do is to fill the lamp by taking up the lid of the pail, two or three times a week. By this method the water is kept milk warm night and day, and I am sure it is one of the best investments in the poultry yard. At present (February 22nd), I have a few early chicks, 200 Plymouth Rocks, now three weeks old. To-night we have the worse snow storm for several years, but they are warm and thrifty in their house, almost buried in snow.

GOOD WINTER LAYING.—FEEDING CORN HUSKS.

MRS. S. E. BRANSON, WESTFIELD, MASS.

I am always glad to get my POULTRY KEEPER. I wish it was a weekly. I have nineteen mongrel hens that have been confined in a building, ten by fifteen feet (with south window), since the middle of last December, and four of these hens were hatched the 15th of July. They began laying the 18th of December, and during the month of January they layed ninety-seven eggs. I have twelve hens laying now (February), and get from seven to ten eggs per day, notwithstanding their close confinement. My method of feeding is about the same as those you recommend in the POULTRY KEEPER, except I have found that corn husks, slit very fine, and then cut short, so they can be swallowed easily, soaked in skimmed milk, is relished by them for a noon meal about twice a week. For green food I give apples, turnips, potatoes, alternating as often as convenient. We have been having extremely cold weather, during which time I gave warm water five and six times a day.

LIME AND LICE.

It is much easier to begin early in the spring, and prevent lice from securing a foothold in the poultry house, than to wait until the lice appear, and then use solutions, as well as applying unnecessary labor to dislodge them. Lice can be driven away by dust, or by any alkaline substance, but the dust must be clean. If filthy, the lice will exist in such dust and will swarm in the droppings and on the floor. Of course, to get rid of the lice, not only should fine dust be used, but the house must be kept clean also. One of the best substances to use is fine air-slacked lime. It should be freely dusted over the walls, roosts, floor, and wherever it can be applied. Fine sifted coal ashes, free from grit, may also be used. It will be necessary to use a sifter with a fine sieve for the purpose of securing the dust of the ashes. The poultry house will be very dusty, but the hens will like it, and it will be better than swabbing and deluging the house with solutions. Lime will also prevent many diseases, and its cost is so little as to be within the reach of all.—*Mirror.*

Brief Remarks from Readers.

In "This Experience Meeting" the Editor Listens and Learns.

Good for January.—Twenty-two of my hens layed four dollars worth of eggs in the cold month of January. Is that good laying for the winter? [Yes.—ED.]—*Dr. J. B. Richards, Brodhead, Wis.*

Keeps 150 Hens.—I am a boy of fifteen years. My mother and I keep 150 hens. I feed shipstuff in the morning, and give them all the milk they want, with corn in the evening. The rest of the food they have to hunt for.—(Name omitted.)

Eggs Too High.—I found that it is a little too steep to pay fifty cents a dozen for eggs to be used for hatching, especially as they may have been chilled. The eggs were worth more than the chicks the past winter. —*R. A. Searr, Albany, N. Y.*

Twelve Hundred Capons.—I caponized 1,200 chicks this past season. I have now dressed and sent off to New York, by special arrangement, 500 capons. If you wish a little of my experience in your paper I will give it.—*B. F. Denson, Morenci, Fla.*

Good Prices.—I am thinking of going into the poultry business. There is always a demand for fresh eggs here. The price now (January) is fifty cents per dozen and none to be had at that. Live chickens for the table sell for from fifty cents to eighty-five cents.—*Geo. F. Putts, Helena, Mont.*

The Aylesbury Duck.—I would like to know why people don't raise more Aylesbury ducks. One reads the addresses of breeders of several varieties of Pekins, but seldom anything else in the duck line. The public knows little of the Aylesburys, and should try them.—*H. C. Hunt, Delavan, Wis.*

A First Hatch.—I have just made my first hatch with an incubator, getting ninety-four per cent of the fertile eggs, and at a period when the temperature outside was six degrees above zero. I digest everything in the POULTRY KEEPER, in each issue, even to the advertisements.—*J. C. Baker, Richfield, Ill.*

Roup in Turkeys.—In the December issue, I noticed an article on "Roup in Turkeys." I have had some experience with that dread disease. Chlorate of potash is excellent. I also bathe the head and throat once a day with liniment, and in mild cases I blow flowers of sulphur down the throat.—*J. M. Smart, Filmore, Cal.*

Mortimer's Chick Feed.—I have had better success by using the chick food of Mr. Mortimer's advertised in your paper, than with anything else, and it is not expensive either as but little need be used. I do not know Mr. Mortimer, but I know that his prepared food for chicks is a good thing.—*E. L. Connor, Baltimore, Md.*

Spanish Brown.—I had a Leghorn hen die as "Fanny Field" describes, and I see that my mistake was in feeding too much damp corn. I use one thing that would be worth stating in your paper. Put a teaspoonful of Spanish Brown in a half gallon of water, and your fowls will lay and be healthy.—*A. Hudson, Pittsburg, Kansas.*

Good Results with Incubators.—I made an incubator from your plans, and the first trial was eighty chicks out of 150 eggs. The next time it was 110 out of 148 eggs. I think it very good. Mr. G. W. Youngblood writes:—"I have made two hatches and sold my incubator, but have built a 500-egg one." —*Mrs. A. Jennings, Davisburg, Mich.*

Cold Weather Laying.—We have made an incubator from your plans and will try it soon. We have sixty-one Brown Leghorn hens, and expect to raise more this summer. We sold nineteen dozen eggs in December, and are getting eggs every day. Our hens are all young, some being hatched very late. —*Mrs. Jennie Kinnaman, Oleo, Indiana.*

Good Results.—I will send you an article for publication, of my experience this winter with eggs. I have had fine results. I am, and have been, getting ten dozen eggs per week this winter, and also a supply of duck eggs. I have only thirty-nine hens. I receive many valuable suggestions from your paper.—*M. I. Richards, Ilion, N. Y.*

Made $1.35 per Hen.—I could not do without the POULTRY KEEPER, as I have had fine success, and made $1.35 per hen (due to it). I have forty-seven hens and pullets. The pullets I raised from a pure bred Brown Leghorn cockerel and half-bred Brown Leghorn hens. If I find that I can make it pay, I will increase to 400 hens. I raise my chicks in a brooder that I made myself, and it is an improvement on one in the POULTRY KEEPER.—*T. A. Varner, Healdsburg, Cal.*

Advice to Follow.—I thought you might like to hear from Nebraska. I would not do without the POULTRY KEEPER. I enjoy reading the articles from the different contributors, and I think you have the right idea of the proper method for keeping poultry, and it does me good to know that there are those who do take pride in keeping the best breeds. I am in unison with nearly all of the writers, and think that the plans are safe to follow. I believe it to be the right plan to have warm poultry houses, as we can then expect our hens to lay more eggs.—*G. M. Wilson, Nebraska City, Neb.*

Leghorns and Minorcas.—I had thirty hens last summer, mostly Brown Leghorns, and made $35 on them during the summer. I think I have done well. I bought a sitting of Black Minorca eggs for $3, and got three of the finest pullets I ever saw. I would not take $10 for them. I had no success in raising chicks, as the crows and rats are very bad out here, and we have too much damp weather.—*G. Zeigler, Port Blakesly, Wash.*

A Proposition.—I send one dollar for two new subscribers. I wish it was for two hundred. Then I would feel that it was but a small way of showing my appreciation of the POULTRY KEEPER. Anyway, let me suggest to your many readers that we each and every one get, say three, subscribers (more if we can) by January, 1894. That, I think, would be very little considering how much we get for so little. What do you say, brother and sister readers? Let's do it.—*Mrs. T. R. Hubbard, Upsala, Fla.*

Light Brahmas.—I had eighteen hens last year, Light Brahmas, and I had splendid luck with them. I sold over 100 dozen eggs and raised 150 chicks, as well as using in the family about fifty dozen eggs. I feed corn, oats, wheat, meat, shipstuff, or anything that my chickens will eat. As for lice, I have none. I clean my poultry house out twice a week, sprinkle coal ashes over the roost, and make a dust bath out of coal ashes for them to dust in, both summer and winter.—*M. T. Rabourn, Virginia, Ill.*

January Results.—I will add my experience, as it may encourage some. I keep a yard of thirteen fowls, one cock and a cockerel, which I put with the pullets each alternate day. I feed judiciously and for the best results. During January I received 190 eggs from them, with the thermometer playing tag at zero, and averaged nearly thirteen eggs per hen. I keep pure bred stock, and believe that blood will tell in a horse, hog, chicken, or man. I owe my success to your paper.—*D. S. Stauffer, Spring City, Pa.*

The Way to Do It.—I have just taken from my Monarch incubator 191 Plymouth Rock chicks, with 174 more eggs to hear from. My fowls have done splendidly, while others complain of no eggs, which I find there are good reasons for, which are want of shelter and proper food. I cannot get clover here, so I substitute corn fodder for my ducks, which I boil for two or three hours, and add a chop of equal parts of corn and oats. I am an invalid, and have to use a wheel chair.—*J. W. Dunn, Elizabeth City, N. C.*

Roup.—I have 125 hens and thirteen turkeys, and this year is my first with artificial hatching. My fowls took the roup and I lost nineteen chickens and three turkeys before I got any remedy. I tried kerosene and I saved all that have taken it yet. I took a turkey feather, about five inches long, and stripped it all to within an inch of the point. I dipped the feather in kerosene, put it down the throat, and then dipped in kerosene again, three or four times, and gave them three or four drops. I also fumigated the hen-house with sulphur —*Mrs. N. C. Device, Mound City, Kan.*

Controlling Vicious Roosters.—I have a number of roosters that I am compelled to keep in a coop together. Some of them are vicious, and to keep them from injuring each other I take a string, fourteen inches long, twist it hard, then double it and tie a knot in the open end to keep the twist in. Then I run the twist back from one end, so as to slip it over one foot, and let the twist go back and run it from the other end, and slip it over the other foot. This leaves the rooster's legs about five and one-half inches apart, allowing him to walk and jump around, and completely subdues the most vicious one I have.—*A. L. Miller, Malta, Ohio.*

What it Costs per Hen.—I noticed in the February issue of the POULTRY KEEPER the article "What it Cost per Hen." It costs Mr. Hunter $1.54½ per fowl and Mr. Wyckoff, $1.10. I took 300 Leghorns out of my flock, January, 1892, and I measured all of the grain, charging market prices for it, keeping a strict account of the bran and meat also, but not of the milk, cabbage, beets and apples. The cost was $1.25 per hen, and they layed 185 eggs each (average), up to January, 1893. They had large yards to run in. The highest price obtained for eggs was forty cents per dozen and the lowest fifteen cents.—*Frank C. Young, E. Venice, N. Y.*

An Experiment in Heating.—I tried an experiment with oil for heating my poultry house. The "plant" consisted of a small double-wick oil stove and an old tin oven. It worked all right for a week. The temperature outside ranged from zero to seventeen below, and in the hen-house it was never below twenty-eight, and from that to thirty-five. The space heated was three pens, each 8x10 feet, or a total of 10x24. All went well until one morning, when, upon entering, I found that I had left the lamp turned up too high and the house was filled with smoke and soot. Quite a number of my Indian Games were nearly knocked out, one pullet being unable to stand up for several hours, and their whole breathing apparatus was full of soot. While the oil in the lamp in the hen house is a nice thing in severe cold weather, I do not recommend it unless more care is taken than I gave.—*D. C. McElroy, St. Clair, Mich.*

Poultry Houses.—The POULTRY KEEPER is a great educator and within the reach of all. Your plan of giving a poultry house every month, which can be built at a reasonable price, adds much to the value of your paper. There are a great many recipes given for the different diseases in fowls, but I think that the poultry houses, as a rule, are to blame for the diseases in the first place. If this point was studied more there would be fewer diseases. Let me say that in the winter season the less ventilation the better, provided the house is kept clean, which I think is the secret of keeping poultry in proper trim.—*Adam Cook, E. Hamilton, Ont.*

The Cow and Hen Story.—Always reading the POULTRY KEEPER, I noticed, on page 164, February issue, the article on the cow and hen, from the Otsego *Farmer*. I was surprised that you accepted it, and I would like to have it explained how a farmer manages to receive five pounds of butter per week if he sells the milk at twenty cents per gallon. He must skim the milk before he sells it, and I do not suppose he could sell such milk for twenty cents per gallon. Then, he states that the cow raises a calf which brings, at weaning time, $10. I think he is mistaken, as such a calf here would bring only $1.50. Besides, that portion about the chickens I do not understand any more than that about the cow.—*Mrs. A. Aurich, St. Charles, Ill.*

A Live Roost.—As "a little nonsense now and then is relished by the best of men," I will give you a little. The other night, shortly after retiring, I heard a great commotion in the stable, where the horse is kept, and where some of the young fowls roost. I jumped up quickly, took a lamp and rushed out to see what was the matter. The stable door had been left open, and the horse had walked out into the yard. On his back I found a young cockerel, who, feeling his perch moving under him, and not wishing to expose himself to the night air, screamed at the top of his voice. I relieved the young fellow by heading off the horse and removing him to a more stationary roost, along with the other fowls, and then sought my bachelor couch to dream of the woes of Brown Leghorns.—*E. E. Boyle, Marshall, Texas.*

A Large Poultry Farm.—Sidney, Wash., is a small town, one mile from the P. S. navy yard. I am not a real estate man, and cannot therefore recommend this climate as first class. I have seventy-five nests within fifty and two hundred feet of my sheds, and feed troughs, with a small run in front of each, which I close when I find one that wants to sit. My sheds will not accommodate all of my hatch without overcrowding, so I arrange low roosts outside, which is very well in summer. I do not allow them to roost on a building or tree, or roost higher than eight feet. My sheds are mostly for fattening, and will easily accommodate five or six hundred at that period. The shed is also for wintering my laying stock. It is portioned off in one end so that they may roost close for warmth. The other roosts are removed.—*H. H. Teltaur, Sidney, Wash.*

Leghorns as Winter Layers.—I have twenty-five Brown Leghorn hens, and as it was my first experiment in handling chickens, I sent for the POULTRY KEEPER and commenced to study the poultry business. It was a very severe winter here—forty below zero at times—and the chicken raisers told me that I could not make Leghorns lay in cold weather, but I can show that careful feeding and warm quarters will explode that theory. My chickens began to lay February 1st, and here is what my book shows: February 1st to 25th (date of letter 26th), I got 221 eggs, getting as many as fifteen eggs one day. I learnt all that I know from your journal. I feed warm mash in the morning, with finely chopped liver mixed with the mash, and grain at noon and night. I use corn, buckwheat and wheat screenings. I find it a pleasure, and very little trouble, and that Leghorns will lay in winter.—*C. M. Beard, Elroy, Wis.*

A Good Drinking Fountain.—I have a drinking fountain for my fowls which works so nicely that I feel like reciprocating the great benefit I have received from the POULTRY KEEPER. First, I went to the hardware store and got what we call a mint oil can, with a screw top and a bail handle. Then I had them to solder cups on two sides, each to hold about a half pint. I have two cups so I can set it in a partition for two yards. Now, to get the water into the cups, punch holes as large as you can make them with a scratch awl, in the can, about half an inch *below* the tops of the cups. Fit the top with a piece of rubber, to make it air-tight when screwed down. Cork the small holes, fill the can, screw down the top, and remove the corks. The cups will fill to the holes, and no further, until the water is used. If the holes are not too small it will remain all right. This is free to all.—*S. H. Devail, Zurich, New York.*

THE MYSTERY OF SCORING.

At the Columbus, Ohio, Show, held February 1st to 6th, the birds were scored. In the Silver Wyandotte class was a cockerel owned by Charles Gammerdinger. We withhold the name of the judge, who was no doubt honest, because we do not present the facts in order to condemn his work, but to show how valueless the score card is.

The way it happened was this: The bird was scored and the score card was misplaced, and the Superintendent induced the judge to score the bird again. Only *two hours* elapsed between the two scorings. The two score cards lay on our table as we write this, side by side, both being "Entry No. 101," and both cards *signed* by the judge. The band number on both cards is "15," and the appearance of both cards is the same.

Here is the score on each card, for the *same bird*, within two hours time. The figures show how much was cut for defects. Score card, No. 1, shows:

	Shape	Color	Total
Symmetry,	1	—	1
Weight,	—	—	—
Condition,	—	—	—
Head,	½	—	½
Comb,	2	—	2
Wattles and Earlobes,	—	—	—
Neck,	—	1½	1½
Back,	—	1½	1½
Breast,	1	1½	2½
Body and Fluff,	—	—	—
Wings,	—	1	1
Tail,	—	½	½
Legs and Toes,	—	—	—
Total defects,			10½
Score, 89½.			

On the second score the bird went up *three* points, and in that two hours the bird was smart enough to improve his comb a whole point, but he lost on weight. His neck and back were also improved, but the bird forgot to improve his wings. As a half point may sometimes decide the first prize it is plain that this bird, by taking advantage of the two hours, and gaining *three points* in that time, was trying to "git thar" if he could. Here is score card, No. 2:

	Shape	Color	Total
Symmetry,	1	—	1
Weight,	½	—	½
Condition,	—	—	—
Head,	½	—	½
Comb,	1	—	1
Wattles and Earlobes,	—	—	—
Neck,	—	1	1
Back,	—	1	1
Breast,	1	—	1
Body and Fluff,	—	—	—
Wings,	—	1½	1½
Tail,	—	—	—
Legs and Toes,	—	—	—
Total defects,			7½
Score, 92½.			

Some of the sections were *perfect*. As the *ideal* allows of not even a blemish, we affirm that there is not a section of *any bird* or breed that is free from some defect, even if minutely slight. No tail on a bird, and especially on a Silver Wyandotte, is perfect and the legs and toes cannot be perfect, nor can the body and fluff, all of which were *perfect* above.

Our object is to show the fallacy of the score card as an *educator*. If a bird changes three points in two hours, when scored by the best known judge in the country, as was the case with this one, then it must be admitted that errors, and gross errors, are possible. We can see, by comparison of the cards, that the judge *tried* to do his duty, but how he found a cut of 1½ for color of breast at one time and found the breast perfect on color at the other, is a matter for consideration.

We are not ridiculing the score, but simply wish to show that the score card teaches nothing and misleads the novice.

ADMITTING NEW BREEDS.

Editor Downs, of the *Southern Fancier*, usually throws out some good suggestions, and he is seldom found far from the winning post. In a reply to an item from this paper, regarding the admission of new breeds into the standard, the *Fancier* says:

"The way to protect the public, as well as the Standard against trash, is to pass a resolution at the A. P. A. meeting not to admit a new breed into the Standard under twenty years after its appearance as a new breed or variety. That will give time for the fowls to develop and show whether they are really worthy to be endorsed by the Association."

We believe that a better plan would be to not allow any new breed to come in until it has been tried under *probation*. That is, should any new breeds apply for admission their claims should be considered, and the breed made to wait until the next revision, which would put an interval of at least five years between the application and the admission. The rule should be that no breed will be admitted at the revision meeting where it is offered, but must wait for the next revision.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY

PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

COMMUNICATIONS

To THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,

Parkesburg, Chester Co., Pa.

CUT clover hay is advertised in this paper.

THIS paper six months, on trial, for only twenty-five cents.

MCFETTRIDGE'S book is only fifty cents. Send to us for it.

USE a safety lamp. It is just as cheap as any other. We have the Hydro, and like it.

THE roup cure of Owsly & Dunnington, Darlington, Ind., is making hosts of friends.

DON'T ask us for addresses of commission merchants. We have no city directories.

YOU can't raise chicks and lice on the same farm. They must be grown separately.

IT is about time that breeders know who is to superintend the World's Fair Poultry Show.

IF you want to raise chicks, do not forget that they are as tender as *babies*. Care is everything.

BUY some eggs now. Never mind the cost. You will get your money back before the year is out.

BROILERS were thirty cents per pound in the New York market, in March, with prices going up rapidly.

CRITICS of the comparison method should be answered in no other manner than to *compare* their work at scoring.

WE suggested that the kerosene emulsion should be put on the market, ready for use. It has come, and is now advertised elsewhere.

THERE are hundreds of advertisers in the March and April issues of the POULTRY KEEPER. They may be little but they are *loud*.

MR. F. DAWLEY, Secretary of the New York State Poultry Society, is an energetic worker. He is the right man in the right place.

JOHN BENNETT, Sunman, Ind., boasts that he has bred Black Spanish for thirty years and never had a complaint. A good record.

"OUR CHICKENS" is the title of a new poultry paper, published by Mr. G. M., Morton, Black Jack Grove, Tex. We hope it may succeed.

WE have a large number of subscribers in Canada. Canadians appreciate our efforts, and send us a great many complimentary letters.

BEFORE asking for the "best" plan of a poultry house, always give the amount of cash in your pocket-book. It is the *cost* that regulates the style.

FARMERS lose a large portion of their time in winter that could be profitably employed in raising poultry and eggs. Eggs are *cash*, and bring receipts *daily*.

WHOSE duty is it to select a place of meeting in Chicago for the American Poultry Association. There is no local association there. It is an important matter.

A HEN and brood will make short work of asparagus beetles.

THERE will be another "Langshan controversy" to be settled soon.

WHEN chicks have good appetites and lose the use of their legs, it is due to rapid growth and is not fatal.

ALL who are interested in the collections of wild flowers should address "Secretary Horticultural Society," Wayne, Pa.

IF you get two subscribers with your own you may send us only one dollar for the three. By so doing you get your own subscription without cost to you.

THE Prairie State Incubator and the Monarch are used on the Long Island duck farms and in some cases as many as thirty incubators are often in full operation at once.

WE do not sell thermometers, incubators, poultry, eggs, or supplies. We do not believe in competing against our advertisements. The only goods we sell consist of books and papers.

MR. W. D. IVES, Cheshire, Conn., at the recent New Haven, Ct., show, won eight regular prizes and six specials, on his single-comb Leghorns. It is not often that a single exhibitor can be so fortunate.

THE Southern Ohio Poultry Association will hold its next show at Washington C.H., O., December 18th to 23rd, with prospects for a better show than ever before. Mr. W. R. Dalbey, Washington C. H., O., is Secretary.

WE are often asked the address of a "game chicken" paper. The *Game Fanciers Journal*, Battle Creek, Mich., is the best of all, and is an established and well-known paper.

MR. WARNER DAVIS, at Philadelphia, and Mr. E. V. Crawford, at New York, were two secretaries that did their duty well. We consider them entitled to the thanks of every exhibitor.

WHENEVER a hen becomes broody, she is fat. It is cheaper to let her sit on a glass egg for ten days, so as to allow her to become reduced in flesh, than to break her up at once.

DON'T feed much corn now. It is too heating. The hens will need but little food of any kind if they are on the range. The rule that "the more feed the more eggs" should be reversed during warm weather.

DON'T you want an Atlas, one that is a great large mass of correct maps, and which is perhaps equal to any atlas printed? If so, you can get the Peerless Atlas from us, and the POULTRY KEEPER one year, for $1.15.

HUNDREDS of persons paid their admission fee at a recent show, to see the *poultry*, and spent a greater portion of their time around a cage of monkeys. Just what right a monkey has in a poultry show is more than we can fathom.

IT takes Brother Davis, of the *Southern Fancier*, to get into the English language when he becomes enthusiastic. He knows every word and its meaning, and when he expresses his views everyone can understand him.

THE annual meeting of the New York State Poultry Society will be held at Agricultural Hall, Albany, N. Y., at 2:00 o'clock, April 5th, and every member is requested to be present. Mr. George E. Peer is President, and Mr. F. E. Dawley, Syracuse, Secretary.

THE East Carolina Poultry Association has been organized, with headquarters at Newbern, North Carolina. The officers are W. H. Oliver, President; J. W. Grainger, John Humphrey, and S. W. Latham, Vice Presidents; L. S. Wood, Secretary and Treasurer.

COLUMBIA, S. C., expects to erect a building to hold 3,000 birds. She invites plans and suggestions. The building is to be on the Fair Grounds, and the association intends that it shall be full of birds during shows. Mr. J. M. Daniels, Lock Box 152, Columbia, S. C., is the secretary.

THE Hendricks county, Indiana, Poultry Association, has selected December 12th to 16th, as the dates of its next show. It is taking plenty of time to work, and means business. Mr. O. P. Phillips, Amo, Ind, is secretary.

BY addressing P. H. Jacobs, Hammonton, N. J., and enclosing two stamps for postage and stationary, and sending the name of some party interested in poultry, he will send you *illustrated* plans for an incubator. He has nothing for sale.

A HEN does not come off the nest to cool the eggs unless the animal heat of the chicks drives her off. If the eggs are not fertile, and the nest not warm, she sticks closely. It is due to the heat of the eggs, and not to her inclinations, that she comes off.

THIS paper is printed from plates, hence any back number can be sent. We have our own electrotyping applicances, and a full complement of presses. The Parkesburg office has to send our huge edition to Philadelphia to be distributed, as its force is too small for that purpose.

EXPECTING an attack on comparison judging by Mr. Felch, some of the friends of comparison have secured a lot of score cards, signed by him, and we will suggest that he should be cautioned, as he may get on dangerous ground or in a mire. Some of the knowing ones are laying low for him.

MR. W. W. KULP, Pottstown, Pa., was among the winners at the Reading and Philadelphia shows, taking first and special on Rose-comb Brown Leghorns, as well as almost a clean sweep in one show. He also won on single-comb Brown Leghorns, and won on breeding pen of White Plymouth Rocks, with other winnings.

MR. GEO. S. BARNES, editor of the *Game Fanciers' Journal* and also of the *Michigan Poultry Breeder*, Battle Creek, Mich., has recently purchased a pretty farm, on the suburbs of the town, and will raise turkeys, ducks, pigeons, goats, dogs, and other stock. He deserves success. Our best wishes are with him.

MINORCAS have held a high place as prolific layers of large eggs. The illustration in this issue is from Mr. E. S. Pugh, whose interest in the breed is such that he has paid as much as $100 for a single trio in England. Yet his prices are no higher than those of other breeders.

MR. W. H. WIGMORE, 107 South Eighth Street, Philadelphia, the celebrated manufacturer of caponizing intruments, has a roup syringe, for injecting solutions in the nostrils. It is cheap, of glass, and so arranged as to permit of injecting liquids, also through the mouth into the nostrils. We will illustrate it next month.

EDITOR WARNER, of the *Poultry Bulletin*, is having a bombardment from all quarters, but our word for it that he will not be hurt much. He thinks he is waking up the sinners, and the sinners will have to listen to his exhortations. We suggest, however, that a little *mildness* on all sides should be kept in view.

MILLER & HEALD, West Chester, Pa., were left out of our report of the Camden Show, but they have been exhibiting and winning lots of prizes all the same. And right here, for the benefit of those who write us for the addresses of breeders of dogs, we will state that the firm has choice broken Collies, Foxhounds and Beagles.

THE poor farmer who had to travel three miles to deliver a can of milk to the station in snow a foot deep, or in mud up to the hubs of his wheels, would shiver all over at the very thought of cleaning out a poultry house, or removing a little snow to give his hens a clear space outside. Yet milk is about ten cents a gallon while eggs have been sixty cents a dozen.

MR. P. A. WEBSTER, Cazenovia, N. Y., has some fine imported White Indian Games, and also a flock of Japanese Games. The latter are the "fighters" of Japan, but Mr. Webster does not enjoy such sport. He considers them superior for practical use. Next season he intends to make a large display of Whites and "Japs" at the shows.

MR. L. C. BEATTY, Washington, N. J., expresses the opinion that the Buff Leghorns are going to give the Browns a hard push for top place. He considers them equal to any layers on earth. Mr. Augustus D. Arnold, of Dillsburg, Pa., makes the same claim. They ought to know, as they have given the breed close attention.

THE show awards from Columbus, O., reached us, and is too lengthy to be given in full, but it is not out of place to say that Charles Gammerdinger, of Columbus, won in nearly every class in which his birds were shown, while Ira C. Keller, of Prospect, O., was also a winner, as was also George S. Singer, of Cardington, O. There was a large number of exhibitors and a huge display of birds.

MR. E. G. MARQUARDT, Burlington, Ia., sold a sitting of eggs, through advertising in the POULTRY KEEPER, to Mr. Frank Osborne, Beatrice, Neb. Mr. Osborne got six chicks,—three cockerels and three pullets, Indian Games. Mr. Osborne showed them at the Nebraska Fair, and the cockerels scored 93½, 92½ and 92; the pullets scoring 91½, 91 and 90. Pretty good for one sitting of eggs.

THOSE who condemn comparison judging should read the report of the judging at Columbus, O., with the score card. Errors are possible under all circumstances. At several shows the Leghorns were cut for "size" (which means "weight"). It is now in order for score card advocates to inform the public how much a Leghorn should weigh. It is foolish to cut a man's bird without "educating" him as to the cause of the cut.

MR. THOS. A. DUFF, 267 Lansdowne avenue, Toronto, Ontario, one of our advertisers, has been sweeping things at the big shows in Canada. He makes a specialty of Black and White Minorcas, and at the recent show at Hamilton, where 1,600 entries were made, he won all the first prizes on White Minorcas, and nearly all on Blacks, as well as second and third prizes; one bird scoring 97½, and none less than 92. We mention this because we believe it fair to let our Canadian friends know that we consider them entitled to recognition.

A "MID-CONTITENTAL" show will be held at Kansas City next winter. The following are the officers of the association: President, Dr. G. W. Davis; Resident Vice-President, E. T. Keim; Vice-President for Kansas, Theodore Sternberg, of Ellsworth; Vice-President for Missouri, M. J. Rountree, of Springfield; Vice-President for Nebraska, C. M. Lewelling, of Western; Secretary, J. J. Cassidy; Assistant Secretary, E. B. Harrington; Treasurer, R. F. Strain; Executive Committee, A. D. Hawk, J. J. Cassidy, R. F. Strain, E. B. Harrington, W. J. Winfield, W. A. Roberts, of Minneapolis, Kan.; C. A. Emry, of Carthage, Mo.; Theodore Hewes, of Trenton, Mo.; C. J. Piper and W. A. Green.

WATER FOUNTAINS.

The best mode of giving water at this season is to use a wooden trough. Once a week it should be scalded and well cleaned. With a trough in use, there will be a saving of labor, as it is easier to pour water in troughs than to fill fountains; and as anybody can make a trough the expense will be but little.

THE FIRST YEAR.

Do not expect to make a profit the first year. If you can get a *start*, learn the *how* and come out without loss the first year, you will be fortunate. You will, however, have gained *knowledge* and *experience*, and the chances are then in your favor. All have to learn, and no matter which branch of industry you pursue, your capital will be of no avail unless you know all about the business.

THE BEST BREED.

All the breeds are the *best*—in some respects. The Asiatics are the best for confinement; the Plymouth Rocks for hardiness; the Dorkings and Indian Games for market; the Polish for beauty, the Leghorns, Minorcas, Black Spanish and Hamburgs for eggs, and the Bantams for pets. But we are not *sure* that we are correct, for many breeders will not agree with us.

ONLY A SPECK.

A breeder who carried a Brown Leghorn male to the Philadelphia Show, paid his entrance fee only to have the bird thrown out as disqualified, because of a tiny speck of white on the tip of a feather. The judge did his duty, and his decision was just, according to standard law, and the breeder knew that a little white speck was not allowed, only he overlooked it in his examination. It was a hard blow to him, as he expected to win, but such is the fate of many. The moral is that you should judge your birds yourselves before sending them to shows.

CHEAP—VERY CHEAP.

As a consolation to those who expect to buy cheap fowls, we give the following as a sample of how one of our readers procured cheap birds. He says:

"I recently bought a trio of Wyandottes from a neighbor for only fifty-cents each, and thus avoided fancy prices. One has a single comb, and one has feathers on the legs. Please give me a description of a Wyandotte."

As the writer knew nothing of what a Wyandotte should be, he did not save anything by buying his birds at fifty cents each, and was imposed upon, not that the neighbor was dishonest, perhaps, but because he was no wiser than the buyer. Had he sent to a breeder he would have saved money and time. Such cases are everyday occurrences.

THE BONE CUTTER IS KING.

The greatest revolution ever made in the feeding of poultry has been in the introduction of the bone cutter. It was the POULTRY KEEPER that asked: "Why does not some one invent a cheap green-food cutter"—and it appeared. It was the POULTRY KEEPER that called for the bone cutter to reduce fresh bones—and it came.

The bone cutter is now as necessary to the poultryman as the plow is to the farmer. In a few years the fertilizer manufacturers will have to abandon bones to the poultrymen, and get their phosphates from slag and Carolina rock. Bones are now *food*, and the demand is growing. Bones make the hens lay, because they contain all of the elements for that purpose. The man without a bone cutter is losing time, money, feed and eggs.

REMARKABLE SCORING.

It has been the boast of score card advocates that the judges score *nearly* alike. As nearly all scores range between 85 and 95, a difference of only *ten*,—it would be strange if any two judges *did not* get within three points of each other. But they will even *score alike*,—on the *total*—and yet they will be utterly at variance. Here is the score of a Buff Pekin cockerel, owned by Mr. J. H. Seeley, of Bridgeport, Conn., as given in the *Stockkeeper*. We select the scores of two noted judges. Bear in mind that the judges did not cut on *condition*, so that loop-hole of escape is removed. It will also be noticed that the bird scored 94 by one and 94 by the other, yet it is not cut alike in any section. As half a point is a large percentage of difference on a section, the value of the score is but little unless correct. Here is the scoring:

	1st Judge	2nd Judge.
Symmetry.....	½	
Weight.....		
Condition.....		
Head.....		
Comb.....		½
Wattles and earlobes.....	½	1
Neck.....	1	½
Back.....	1	½
Breast.....	½	1
Body.....	1	½
Wings.....	½	1
Tail.....	½	1
Legs and feet.....	½	
Total defects,	6	6

In the above we have the spectacle of two judges giving the same number of points—94—yet they did not score alike in a single point. How much "*education* of the novice" is to be seen in the above must be conjectured. The fact is, that as all scores are seldom lower than 85, the number of points might as well be 10 instead of 100, as all the judges seem to work within the 10 or 15 point limit, and if they miss by three points, they forget that such a difference is about 30 per cent.

HE WANTS TO PRESS THE BUTTON.

Some persons are very unreasonable in their demands. They wish to make the poultry business pay without *work*. They are willing to *work* at anything, even on a railroad, but when it comes to poultry they expect large profits on a small capital, and *no work*. It is such a nice business for women and children, invalids, or the aged. The hens will lay the eggs and all you have to do is to sell them.

We are reminded of these things by a reader who has just hatched with an incubator. He has trouble on his mind, as the following letter will show:

"I have been three weeks engaged with an incubator. I put in 348 eggs and only got 283 chicks. Some of the eggs were chilled, I am sure, when I bought them, but I don't see why the others did not hatch. It shows that an incubator will not do as well as hens. I had to turn the eggs twice a day, trim the lamps, and see that the heat was right, and if I had set the eggs under hens such work would have been avoided. Why don't someone invent an incubator that will save so much work."

The very fact of the reader writing such a letter is alone proof that he does not know what he is saying. His work was done in January. We would like to know where he could have found enough *sitting* hens to hover 348 eggs, for it would have required 29 hens, each hen covering a dozen eggs.

Would he have been able to secure 10 chicks out of 12 eggs, from every one of the 29 hens. We believe not, yet that is *about* what his incubator hatched for him, and he only attended to it *twice* a day. Of course, if he had used hens, all *work* would have been saved, as (in his estimation) hens need no food, water, or other care. They just sit down and hatch out ten chicks from twelve eggs, in cold weather.

Yes, a "labor-saving" machine *would* be a blessing. There should be a labor-saving plow, a self-feeder and milker for the cow, and an automatic arrangement for breaking colts, all that should be necessary being to "press the button." Of course, the *money* to buy such things is of no consequence, and the man who can invent an incubator which will enable one to jump into bed, pull the coverings over his head, and *sleep*, leaving the machine undisturbed for three weeks, will be a public benefactor. And so would be the man who could invent some plan to enable persons to *breathe* without being compelled to expand and contract the chest.

We advice our friend to give up the hard work of hatching 283 chicks out of 348 eggs, and take a little recreation as helper in a blacksmith shop. He needs rest badly.

THE PHILADELPHIA SHOW.

The city of Philadelphia has no hall in a central location that is suitable for a large show, and this difficulty was one with which the officers had to contend. The superintendent did hard work and aimed to please all, but a few mistakes occurred, despite his vigilance, due to the rush of birds, but they were unimportant, and he gave general satisfaction.

The Secretary proved himself a veteran, though he claims that he was inexperienced. The officers did their duty well, and we believe that the exhibitors will agree with us in complimenting them for the discipline maintained and the impartialty bestowed.

That the show was great, and some of the best birds in the country were there, is admitted by all, and that Philadelphia, if she had a hall adapted for the purpose, would hold the best show annually, of any city in the United States, is accepted as a fact. Fortunately, just such a hall is contemplated, and it is believed will soon be erected.

J. A. Roberts, Malvern, Pa., the old veteran breeder of Light Brahmas, had his birds there, and of course he won his share of the prizes on Light Brahmas; as did Dr. S. C. Moyer, of Lansdale, Pa., while T. E. Burroughs, of Hurffville, N. J., was also a prize winner.

We are pleased to notice that W. J. Gallagher, Norristown, Pa., showed some White Langshans that were above the average, and he took some of the premiums. Mr. Gallagher is the one who made an effort to protect the breed from deterioration.

Barred Plymouth Rocks were strong. We noticed the excellent exhibits of several leading breeders, among them D. A. Mount, Princes Bay, N. Y. His birds were among the winners.

A pretty lot of Buff Plymouth Rocks was exhibited by G. M. Woods & Bro., Leaman Place, Pa.

W. W. Kulp, Pottstown, Pa., who won largely last year, also won on White Plymouth Rocks this year.

Dr. S. C. Moyer, Lansdale, Pa., was a large exhibitor of White Wyandottes, and also a winner, and E. C. Espenship, Collegeville, Pa., was the principal exhibitor of Black Wyandottes. Dr. Moyer also showed largely in Anconas, winning most of the prizes.

There was a good display of Brown Leghorns. A. E. Holman, Hammonton, N. J., exhibited a fine pair of single comb Browns, and J. C. Robinson, Hampton, Va., also brought some fine birds. W. W. Kulp, Pottstown, Pa., was one of the leading winners on Rose-comb Browns.

Buff Leghorns were very fine, and Augustus D. Arnold, of Dillsburg, Pa., brought some of his famous birds. Being an importer, as well as a breeder, he captured his full share of prizes, as was expected.

J. C. Haynes, Annandale, Pa., made Dorkings his specialty at the show, and A. E. Blunck, Johnstown, Pa., made a large display of all kinds of games. Meadow Farm, Pittsfield, Mass., made the largest exhibit in all classes.

In Indian Games the display was good. G. M. Wood & Bro., Leaman Place, Pa. won in this class, and made an excellent exhibit. C. E. Rockenstyre, Albany, N. Y., was the largest winner in Bantams.

White Turkeys and Pekin Ducks were well shown, D. A. Mount, Princes Bay, N. Y., winning in these classes. Mount also showed dressed ducks and specimens of large eggs, on which he won. T. Farrer Rackham, 245 East 56th street, New York city, brought his prize Muscovys, which were greatly admired.

Incubators were in operation, the Prairie State and Pineland exhibiting both incubators and brooders filled with chicks. The Excelsior was on exhibition, but not in operation.

Mann, Webster a d Wilson Bros., had their bone cutters in operation, and the seedsmen, H. A. Dreer, and Johnson & Stokes, both of Philadelphia, made large displays of poultry supplies.

Spratt's Patent provided the coops and fed the birds, and also exhibited their celebrated dog cakes, poultry foods, etc.

It is hoped that next year the Association will have more favorable opportunities, as it has an energetic body of men to do the work, each and all being enthusiastic in their efforts to excel other shows.

THE NEW YORK SHOW.

Comparison judging has again been tried, and though a few errors may have been made, yet they are small compared with the variation in scores when the score card is used. When a judge must finish his work at the rate of "one a minute," as with the score card system, he has no liberty to criticize any other method.

The great feature of the New York Show was the incubators and brooders, which were in full operation. The Prairie State Incubators not only hatched hundreds of chicks, but the visitors bought them at fifteen cents each as fast as they could be put in the brooders. This incubator took the prizes at the show, though it must not be overlooked that the Pineland Incubator also did some good work.

A large crowd was around the exhibit of Apollo Brooder Co., of Ayer, Mass., where the superintendent was explaining the improved method of brooding by the use of the Apollo Brooder, and we were much pleased with its arrangements and workings.

Bone cutters, all run by power, were cutting the green bone from morning until late. The Webster & Hannum cutter had several cutters going at once, displaying the bone cut very fine. The Mann Cutter was in full operation but a short distance away, and the Wilson near them. Cut bone is now a staple article of food, and a bone cutter is as necessary to a poultryman as a grain bin.

The display of eggs, by Will C. House, Fort Plain, N. Y., was really artistic, and exceeded anything of its kind ever seen in a show room. He keeps 1,000 hens, and displayed eggs of all breeds and crosses, properly labeled, which was alone worth the price of admission to the show.

Mr. A. Stillman, Alfred Centre, N. Y., who has superintended several large shows, and who pins his faith to Red Caps, Buff Leghorns and Minoreas, made a careful examination of the exhibit for future use by himself.

The display of White Holland turkeys, Pekin ducks, dressed stock and eggs, by D. A. Mount, Princes Bay, N. Y., assisted in adding to the attractions of the show.

The veteran old Light Brahma breeder, Stephen Spencer, of Morris Plains, N. J., who never fails to bring good birds, spent most of his time admiring his birds and comparing them with his competitors. He declared the exhibit of Light Brahmas to be equal to any ever seen.

James Forsyth, Owego, N. Y., (who is mentioned for President of the American Poultry Association), made a large exhibit. His specialty is the Leghorn, but he also turns his attention to some of the other breeds, and is also looking after Buff Wyandottes and Buff Plymouth Rocks.

Capt. C. M. Griffing, Shelter Island, N. Y., is the Treasurer, and he also assisted as Superintendent, but that did not prevent him from showing and winning with his Plymouth Rocks and Light Brahmas.

The Secretary, Mr. H. V. Crawford, was very courteous and kind to all. His work was well done, and he deserves great credit. The association was fortunate in having him undertake the arduous task.

Spratt's Patent had the honors of supplying the coops and feeding the birds. The great hall was kept as clean as the floor of a dwelling.

Mr. Hunter, editor of *Farm Poultry;* Mr. Atherton, of the *American Stockkeeper;* Mr. Warner, of the *Poultry Bulletin;* Mr. Branday, of the *Practical Poultryman;* Mr. Drevenstedt, of the *Fancier's Journal*, and Mr. Darrow, of the *Fancier's Review;* were some of the editors met by us.

The celebrated Knapp family seemed to gobble up the prizes without mercy. Knapp Brothers, of Fabius, N. Y., went for the White Leghorn and White Wyandotte awards; Willard Knapp, also of Fabius, captured in the Black Minorca class, and B. R. Knapp, of Cortland, N. Y., turned his attention to the Rose-comb White Leghorns. The Knapps are born fanciers.

Lewis C. Beatty, of Washington, N. J., expected to make a large display of Buff Leghorns and Indian Games, but was unable to do so on account of pressure of business, but the few Buffs that he showed won.

"Uncle Isaac" Felch came down from Massachusetts to inspect "comparison judging," and we expect him to begin with his batteries as soon as he becomes rested.

Swans, pheasants and other ornamental birds were numerous, and added largely to the display.

The pigeon department was full, every variety of pigeons being shown. It seemed as if there were several thousands of them.

Mr. Geo. Udall, Jr., came down to look after the interests of the Black Leghorn Club, and he is also making up his mind to give some of the breeders a lecture on clubs.

Bro. Hamilton, of the *New England Fancier*, had "important business" at home, and we did not have to dodge around the coops to escape him.

The month of March is too near the opening of the rainy season for poultry shows. Both New York and Philadelphia should hold their shows in January. The snow was two feet deep 100 miles from New York, which no doubt was a drawback to breeders.

There was a "kick" on the awards in the Pit Game class. When one of the breeders of Pit Games was asked how to best judge the Games, he replied, very earnestly, "fight 'em." The association did not approve of his suggestion.

The hall was crowded nearly all of the time, and many "millionaires" had birds on exhibition.

The show was one of the best of the season and the association was fortunate in its selection of officials.

Ground oyster shells, ground cracklins, ground bones, these three do not cost much and they are great helps towards egg production.

HOUSE WITH GLASS RUNS.

The plan given is for a house made of rough material, or ornamental,as preferred, the object being not so much to show the interior arrangement as to give sunlight from sunrise to sunset. If the house faces the south-east, the warmth will enter as soon as the sun is up. When the sun gets around to the west, the warmth will reach the other run, one being on the south-east and the other on the south-west side of the house. The door to the house may be placed anywhere at the opposite sides. The window at the gable end is intended simply to light the interior to permit of the hens seeing how to get on and off the roost, though a window may be on one of the sides also. A house 10x12 feet, with each run 6x8 feet, will be sufficient for a flock of fifteen hens, and they will have a warm place, with plenty of light, as well as ample protection from snow and cold winds.

ORIGIN OF BUFF WYANDOTTES.

As the Buff breeds are now attracting attention, a correspondent of the *Poultry Bulletin* gives some points as to the origin of Buff Wyandottes. He says that the late Charles H. Jenney, of Westport, Mass., was noted for crossing the various breeds of poultry, his object being not to make new breeds, but to produce the best laying hens, his business being eggs for market. Mr. Jenney got stock for crossing,and one of the breeds which pleased him was Silver Wyandottes. This was crossed with the Rhode Island Reds, an old breed that was largely raised by the farmers in that section, and being about equal to Leghorns for egg production, the owner not being particular to breed to feather. Some were red, others light and dark buff, clean yellow legs and single comb. The result of this crossing has made the Buff Wyandotte, and there are specimens to-day that are perfect in shape and color from beak to end of tail. The greatest objection remaining is black in hackle and tail, but with careful breeding this will soon disappear.

The Buff Plymouth Rocks were started in about the same section by crossing Barred Plymouth Rocks with the same red fowl. Both being single comb and yellow legs, it was an easy matter to get good specimens sooner there with the Wyandotte cross; but care must be taken in trying to breed out black feathers, as they have a tendency to show white in wings; darker colored males should be used. Breeders of the older breeds should not be jealous of these new ones. All the varieties of Wyandottes and Plymouth Rocks were new once. More breeds mean more business and more pleasure in breeding and exhibiting. The world is large and there is room enough for all.

LATE CHICKS FOR HOME USE.

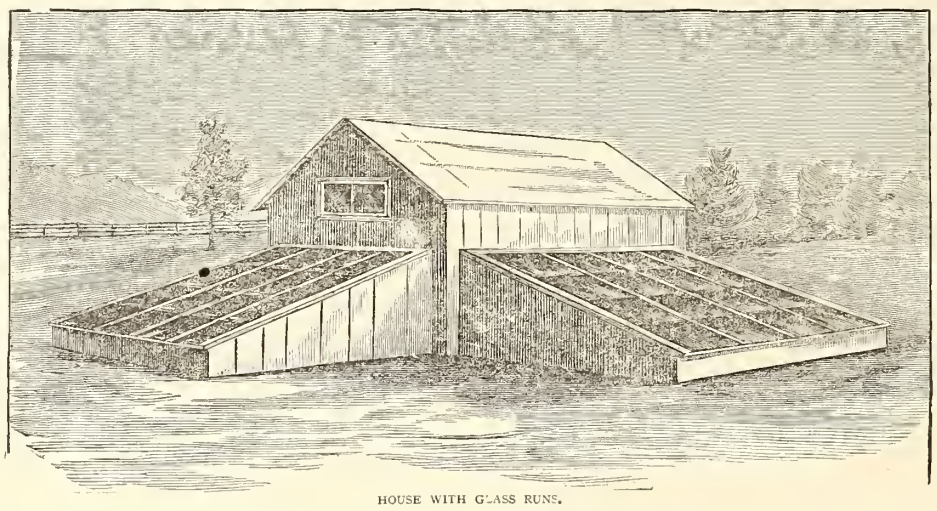
Those who do not wish to raise late chicks for market should not deny themselves the luxury of having choice poultry on their own tables. Fried chicken, roast chicken, and chicken stew are dishes that may be enjoyed to greater advantage in summer than at any other time, and it is an opportunity the farmer has when prices are low. If poultry is cheaper than beef, then there is no necessity for purchasing beef. If the farmer's wife will hatch young chicks at all seasons, and not cease because the weather is warm, the family can be supplied with meat without entailing much expense. There are many persons who buy beef at twenty cents a pound and yet sell better meat in the shape of chicken at half that amount; and, we may add, there is something in knowing that when you raise chickens for your own use they are free from disease and the meat is fresh, which is a very important matter in these days of dressed beef and pleuro-pneumonia.

INCUBATORS AND HENS.

There are advantages pertaining to both incubators and hens, but an incubator will permit of a larger number of chicks being raised at one time than can be done with hens, and it can be operated at any time, thus permitting the hatching of chicks in winter for early broilers. There is an immense amount of work to do in looking after an incubator, while constant care is required to properly manage the brooders and keep the chicks growing and in good health, but all the labor bestowed will be amply repaid by the high prices obtained for the chicks should they get into market early. There are sometimes poor hatches with incubators, but the same may be said for the hens. A good brooder does not cause as great loss of chicks as is the case with hens, as hens often tread upon them, and in cold weather, unless the hens nestle for them often, the chicks die from cold. We do not advise every one to try an incubator, but those who are willing to devote plenty of time to one need not be disappointed.

THE NO-WATER PLAN WITH CHICKS.

It is claimed that chicks can be raised to better advantage without water than with it, and some persons have really been successful in dispensing with water, but it depends upon how the chicks are fed. The reason that chicks were supposed to thrive better without water was because so many of them would get wet, the loss from such cause being ascribed to the drinking of the water instead of to the chilling of the chick from its getting wet. If water is given the chicks in a manner so as to permit them to only get their beaks in it, no danger will result. Young chicks can be raised to a certain age without water if they are fed soft food. A mess of ground grain, if cooked, absorbs a large quantity of water, which will supply the necessities of the chick. It is natural for all birds and animals to have water, and if they do not get it in one shape they must in another, or perish. Water is indispensable. All dry food must be softened with water or it cannot be converted into blood, as blood is largely composed of water.



HOUSE WITH GLASS RUNS.

UTILIZING BLOOD FOR POULTRY.

If the fresh blood from the slaughter-houses was put to such use as food for fowls, it would save much waste as well as provide a food rich in nitrogen and also well adapted for egg production. It can be given with advantage to chicks as well as to fowls, and be used in several different ways. First, by mixing one pound of blood with three pounds of mixed ground grain, and the whole mixture cooked as bread, there is nothing superior to it, not even excepting meat; and second, if the blood is put in a bag and boiled it makes a food that not only takes the place of meat but is better for the purpose. As the blood at slaughter-houses is usually wasted there should be no difficulty in procuring it. It will keep any length of time in winter, but at this season should any portion remain after feeding the hens, it may be added to the compost heap, where it will still be valuable as one of the best nitrogenous fertilizers that can be used.

CROSS-BRED ROOSTERS.

At this season, when the young roosters will appear handsome and well shaped, it will not be an easy matter to resist the temptation of retaining one or two of them for the next season, but our advice is not to keep a cross-bred male under any circumstances, as his progeny will be lacking in uniformity. If cross-bred males were used the stock would soon deteriorate. Cross-bred hens may always be retained, but as the male influences the entire flock he should be pure-bred. If the male is pure-bred the chances are that the chicks will all be alike in color, no matter what the dams may be, and as a pure-bred male costs but very little, no risks should be made with one that is cross-bred.

A NEW REMEDY FOR GAPES.

A very simple and probably safe remedy for gapes has been suggested, which is to open the beak of the chick and blow a pinch of insect powder down the throat. If the best insect powder be used, such as buhach, which out to be procured at every drug store, no doubt it would prove efficacious. A solution, made by pouring a gill of boiling water on a tablespoonful of the buhack, may be made, and a bread crumb moistened with it and crammed down the throat. As buhack is death to all insect life we believe it will destroy the gape worm, but as we have not tried it we would suggest experimenting on one chick before using it on others.

HOW TO FATTEN DUCKS.

Pen them up for a week, giving them a narrow trough of water for drinking purposes. In the morning give them a mixture of half-mashed potatoes and half corn-meal, with all the chopped grass they will eat. At noon give them cooked corn meal, and keep plenty of milk before them if it is plentiful. At night give cooked corn meal with all the cracked corn they can be induced to eat. They should be fattened in as short a period as possible, and if kept in a small yard, with a dry place at night, they will gain in flesh rapidly.

YOUNG TURKEYS.

We will call attention to the following necessary rules: Examine every day for lice, especially the large lice; do not let the young turkeys get wet; hatch them for the first broods, and let the turkey-hens hatch the second broods; feed meat every day, also allow plenty of milk, bread and chopped green food; give drinking water so that they cannot get wet; keep them very warm and comfortable at night; feed every two hours, and on as great a variety as possible after they are a week old; change location of the runs daily. Above all, look out for lice.

FEATHER PULLING IN THE FLOCK.

Feather pulling is a vice that is about the worst that can be incurred by a flock, for the reason that in a majority of cases nothing can be done but to sell off the birds and begin with a new flock, as it is almost incurable. It may be noticed by the feathers being picked bare from the breast and neck, finally every portion of the body becoming nearly naked, the cock usually being the first to suffer. The cause of feather-pulling is supposed to be due to a lack of meat, or some element required as food, but this is not always the case. Idleness (and over-feeding) is at the foundation of the vice. For want of something to do one of the hens will carelessly pluck a feather from one of their number. The blood at the end of the quill being relished, the hen discovers that she can be furnished with an unlimited supply, and in the course of a short time she picks every hen in the flock. The others soon learn the vice, and laying is over, as hens cannot grow feathers and lay eggs at the same time, as a rule. Kill the first hen caught in the act. After it becomes general in the flock there is no sure way of preventing the vice.

GREASE THE HEADS.

It would be well at this season to grease the heads and necks of the hens once a week, using nothing but lard. Do not grease the bodies, as grease is something the hens dislike. Do not use kerosene, as lard alone is sufficient. This is to kill the large lice. Little chicks, young turkeys and ducklings may be also greased on the heads, but a drop of lard will be all that is required, as too much grease will kill a chick. Grease will always kill lice, and, if it is desirable to add something to the lard, let it be crude petroleum or carbolic acid, five drops of either being sufficient for a tablespoonful of lard.

LOOK OUT FOR LICE.

Although we had supposed our readers had been inflicted with too many hints in regard to getting rid of lice, yet we have received numerous inquiries as to the best mode of freeing the birds of the pests. They are incessant workers and render poultry-keeping a nuisance. There are several kinds of lice, but the little red mites and the large body lice are the two most mischievous. The former can be seen in myriads on every portion of the poultry-house. A good dust-bath and the use of coal-oil will soon clear them out. The latter do not leave the fowls, but work silently on the body, and especially on the head and necks. The best remedy is to grease the head, neck and vent, and then dust Persian insect powder in the feathers. Thoroughly clean the poultry-house. Mix one quart of coal-oil (kerosene) with four gallons of skim-milk or strong soapsuds, and saturate every part of the house, walls nests, roosts, floor and yards. Do not miss the cracks and crevices. If not expensive use pure kerosene, unadulterated. Let every part of the roost be saturated. Repeat the process twice a week. Whitewash once a month. It requires work, but the method suggested will cause them to leave, or per ·b.

SHIPPING LIVE FOWLS.

At this season the fowls sent to market in coops will be exposed to draughts, not only while on the journey, but while waiting to be sold. They should not be crowded, should have plenty of food and water provided, and the coops well covered on the sides and top with muslin, unless the weather is very warm, when the top may be left uncovered. If the bottom of the coop is somewhat open they will get plenty of air. The most important matter is to cover or protect the sides and leave only half of the top (the center) exposed, so as not only to keep out the winds but to allow plenty of air.

STRANGE HENS IN THE FLOCK.

It is the strange hen brought into the flock that often introduces lice, as well as disease. One should never buy a hen and put her with the home flock except with the greatest caution. No matter how careful you may be, should the strange hen come from a yard containing sick birds, one may have the germs in her system and spread the disease among your own, or a few lice may be on her body, which become the parents of millions, making her a living hot-bed of pestering lice, from which they spread over the entire premises. It is hard work to be rid of lice, and it does not pay to run any risks. Cholora, roup, canker, lice and feather-pulling may never be in your flocks until some new-comer arrives, and the damage she may cause in a week will be a hundred times her value, and its effects may last for several seasons. It is more important to be careful now, as the warm season is approaching and the risk is greater.

A HEN AT AUCTION.

On a New England farm, several years ago, says George Appleton, in the *Metropolitan*, an auction was held to close an estate. Sometime before the auction the poultry was disposed of at private sale and taken from the roost at night.

The next day, however, a little old hen, and a gaunt, shabby cockerel, akin to the Brahma breed, appeared. The two had a private roosting place somewhere, and had escaped removal with the rest of the flock. The hen made much sport at the auction and had a subsequent history.

The hen was old—some said at least ten years old; she had spurs nearly an inch long; the body and plumage were like those of the brown Leghorn, but there was only a trace of a comb, and the legs were almost as short as bantam's legs—yellow as gold and sufficient for her walking and scratching needs.

She was a talking hen, that is, she had a peculiar cluck or chuckle that was between a crow and a cackle, and yet unlike either, that was in some measure, or some of its measures, musical, at least, cheerful and agreeable to hear. And she was the most garrulous, scolding "talkative" biddy ever seen. During the auction, she was front and foremost in any group where a sale was going on, perching on everything that was offered for sale, even on a cow's back, where one man said, she had, probably, her roosting place, since it was evident that she knew enough to select a place where she keep her feet warm.

The hen was followed, as far as he dared, by the cockerel which she abused shamefully. Occasionally, to relieve the monotony of the sale, she flew at the cockerel, pecked him, and then walked away chuckling louder than ever. A man present who had tarried too long at the tap, remarked, "Jus' like Maria! Allus a scoldin' an' a euffin, but smarter'n chain lightnin'!"

At last everything was sold. The hen that had attracted so much attention, and caused so much amusement during the sale, was now perched on a wagon top, calmly surveying the scene, and chuckling, scolding with great energy, perhaps for the benefit of the cockerel that had mounted a wheel in his attempt to follow her.

The auctioneer exclaimed, "Hold on! Not all sold yet! How much for the hen and her mate? You can sell the hen's spurs to buy a coat for the cockerel! How much?" The man who had referred to "Maria" declared that that was always his luck, that when something good was going, he had no money to buy. But the bidding was lively. Started at twenty-five cents, the hen and cockerel were knocked down at three dollars and twenty-five cents.

Several bidders had been so much amused by her antics that they were willing, evidently, to pay more than the hen was worth. (But it was not a bad bargain. When taken in hand the body of the hen was found to be an ideal body from a fancier's view—compact, round, solid, yellow. The hen was mated with a Dorking cock, and from them sprung a race of fowls equal to any thoroughbreds known, as market fowls—fowls with small bones, small waste pit and great capacity for taking on flesh compactly and quickly. No fowls bred ever produced so much flesh on the same space—on bones so small that they appeared to be designed for a smaller bird. It was called the "Butter" breed, and, in the place where bred, was the favorite. Therefore the price paid for the original hen was not high, considering her subsequent utility.)

DRESSED POULTRY.

According to the instructions sent out by a Cleveland, Ohio, firm, to shippers, poultry must be dressed according to the peculiarities of the market to which you intend to ship. Scalded poultry brings much higher prices than dry picked, and the following directions must be strictly observed:

Leave the feet on and never draw the entrails. Cut off the head and tie the skin over the neck bone. The legs and necks of turkeys and chickens should be dry picked immediately after killing, to prevent discoloration when exposed to air. The water for scalding should be boiling hot. Immerse the bird, holding it by the legs, and lift it up and down two or three times in the water. Immediately after scalding remove all feathers and pin feathers very clean and without breaking the skin. After scalding ducks or geese wrap them in a cloth about two minutes. Then the down will easily come off with the feathers. All poultry should be plumped after picking by dipping for an instant in boiling hot water, then thrown into cold water and left for about ten minutes. Avoid cutting or bruising the skin or flesh. Poultry should be entirely cold but not frozen before being packed. If any animal heat remains it always arrives in bad condition. Chickens and ducks may be shipped in barrels or boxes, but turkeys should be shipped in boxes only, as they get bent and twisted too much in barrels. For packing material use only very clean, dry wheat or rye straw. Never use oat straw. Brown paper may be used. Place a layer of straw in the bottom of the package, then alternate layers of poultry and straw, stowing snugly, back upward and legs out straight, filling so that cover will press down snugly upon contents, keeping them snugly in place. Always put different kinds in separate packages if possible. Mark weight and kind on cover and mail advice of shipment at once,

WINTER DISEASES OF STOCK.

Whenever a persistent, hard frost sets in farmers have trouble with their live stock, either horses or cattle, or perhaps both. At times the cattle may be all right, but the horses all wrong. To the farmer it is a mystery, and he is often at a loss to account for the sudden sickness and death among his stock. The microscope has in later years dispersed much of the mystery in which these visitations were enveloped, for it has been shown that nine-tenths of the diseases of mankind are due to the presence of some minute micro-organism in the system, or, more properly speaking, in the blood generally, and that these organisms are of vegetable origin principally. Now, if this is so, and bacteriology proves it to be so, why should our animals be exempt? Are they not more exposed to risk of the incursion of the vegetable forms of life deleterious to health? During sharp frosts the ponds are frozen up, the roofs of the barns often have to furnish the water on many farms, and as the snow melts it brings down much of the vegetable fungus covering the roof and animal matter, too, for the roof holds this as well. Decomposition takes place and develops germs deleterious to health. Again, fodder is thrown around in a careless manner, to become a vehicle to convey disease germs. Mildew on corn, corn fodder, hay, etc., particularly straw, is nothing else than vegetable organisms in development. Musty oats should be examined under a microscope, and the facts revealed will arouse the farmer to realize the importance of investigation into the state of feed stuffs in winter and lead him to adopt measures to prevent these serious winter visitations of disease.

Good barns are needed wherein to stack provender for winter use. Stacking in dirty farm-yards should cease. The provender should be inclosed in good barracks—the corn and oats stored in a dry granary and the corn fodder kept under cover and off the ground. Water should be boiled when it comes off the roof or out of a stagnant pond in winter, and such attention will stop much of this trouble and loss. Medical treatment is not a success in combatting the effects produced by these vegetable organisms, as these organisms multiply apace in the bodies of the animals that become the hosts, nolens volens, so that death claims the animal as its victim before the remedy can extinguish the microbes.

During the last two or three years cows have suffered considerably over a wide area from a low form of vegetable life attacking the mouth and digestive tract; even the feet became excoriated. Their mouths, lips cheeks, gums and tongues were attacked, the fungus fixing itself in the interstices of the teeth; the mucous membrane was destroyed by it, the breath becoming offensive in consequence, ropy, unhealthy mucus and saliva dribbling from the mouth, and loss of power of deglutition was marked. Some died, but those submitted to treatment recovered. Now it seems that horses and dogs are having a somewhat similar form of tongue and throat trouble, and as the canines breathe through the mouth this condition is serious with them. Many have died and many more have been shot for fear of rabies. Horses affected appear dull and listless, the pupils dilated, pulse about forty, breathing about twelve, or natural; the temperature, but little elevated at first, will go a little below normal. They will fall down in a day or so and die without a struggle. In districts affected the animals should be treated to an ounce of hyposulphite of soda in half a bucket of clean water daily. The mouths should be mopped twice a day as soon as they are found amiss with the following: R.—Tinctnre ferri perchloride, four ounces; chlorate of potash, one ounce; water, eleven ounces. Dress every part carefully. As to medicine this should be given hypodermically by a doctor to be of any decided value if the germs have taken the citadel by storm, but in ordinary use the peroxide of hydrogen appears to have a determined effect on micro-organic life, and if given with care may save animals when the doctor cannot be reached.—*Baltimore Sun*

THEY CANNOT LET GO.

The mechanism of the leg and foot of a chicken or other bird that roosts on a limb is a marvel of design. It often seems strange that a bird will sit on a roost and sleep all night without falling off, but the explanation is perfectly simple. The tendon of the leg of a bird that roosts is so arranged that when the leg is bent at the knee the claws are bound to contract, and thus hold with a sort of death grip the limb round which they are placed. Put a chicken's feet on your wrist and then make the bird sit down and you will have a practical illustration on your skin that you will remember for some time. By this singular arrangement, seen only in such birds as roost, they will rest comfortably and never think of holding on, for it is impossible for them to let go till they stand up.—*Globe-Democrat.*

THE GOSLINGS.

If the old goose is permitted to do so she will take her young to the water, which does no harm if the water is warm, but at this season keep the goslings away from ponds, as they cannot endure the chilling from the water. Feed them on grass, milk, mashed potatoes and ground grain three times a day

DISEASES OF FOWLS.

Head Purple.—As this is an indication of a disordered system and not a disease in itself, a few pointers in the way of suggestions will be in place, and may be the means of saving many fowls by knowing and watching the symptoms, and applying immediately remedial agents.

The head and comb of the common fowl may, as a rule, be taken as a fairly true index of the condition of its health. Intense redness does not indicate fever, however, as fowls are not much subject to febrile diseases, but rather of an organic nature chiefly; therefore, when inflammation of the lungs, bowels, stomach, oviduct, etc., takes place, the head or comb cannot be relied on as to the nature and location of the disease; consequently experts in veterinary science have recourse to feeling the region under the wing and along the abdomen to the vent. A little practice and study will greatly aid the breeder to diagnose the disease, locate it and learn much of its intensity.

A purple head and comb almost invariably accompany congestion of the lungs, liver, brain and other vital organs, and is also present in asphyxia, apoplexy, cholera, etc. When this symptom is noticed, and at the same time no undue looseness of bowels, with milky evacuations, or straining, griping and discharge of green and sulphury matter, as in the case of consumption of the bowls and cholera, you will know that congestion has taken place, and that the blood and vital organs must be aroused to healthy action by two-grain doses of calomel and ten of jalap twice a day, until the system is relieved of morbid matter; then tone up by giving a spoonful or two of quinine and iron mixture. These remedies will often save a fowl if given on the first appearance of congestion. A simple aperient like Epsom salts is splendid in such cases, say half a teaspoonful for a dose. It is much better than castor oil, which seems to do no real good when given to poultry, owing no doubt to the peculiar chemical properties which come in contact with it in the system and affect a change in its nature. In case of brain disorder give three-grain doses of bromide of potassa twice a day, followed by aperient.

Head Twisted.—This may arise from paralysis of some of the nerves or ganglions of the brain, or spinal inflammation, or it may be congenital and organic. In the latter case the fowl should be killed, as there is no use to doctor it. Sitting hens, those weakened from steady laying and sitting, and of a nervous character, are sometimes affected in this way, but it usually comes from a contraction of the muscles or from long-continued posture in a narrow place, forcing the head to assume a twisted shape.

The tremulous motion of the head, the wildness of the eyes, with distension of the pupil, are signs of brain or spinal disorder, and if it does not readily yield to bromide of potassa and one-grain doses of podophyllin daily, medicine is useless and it is a waste of time to bother with the fowl. The fact is it is folly to spend time and money doctoring fowls suffering from such complaints, except in cases of temporary illness, for such fowls are not fit for breeding, and little confidence can be placed on them for laying. A valuable bird is deserving of attention when sick, but when the disease threatens to impair its usefulness forever it would be charitable to shorten its life and save it from much sufering.—*Poultry Monthly.*

PLUMAGE OF PARTRIDGE COCHINS.

The plumage of the cock may be briefly described as head bright red; hackle the same, or with a yellower tinge, making a fine orange color, each feather having a distinct black stripe down the center; the plumage of the back and saddle to correspond with that of the hackle; the breast solid black, rich and glossy; body and under-parts, black; the small wings display black butts, formed by the black end of the secondary feathers, the outer webs of which are bay in color, while the inner webs are black. The primaries are black with the exception of a narrow bay edging on the outer web. The wing-bows are red and the coverts black with a green lustre, and form a wide bar across the wings. The tail is black, the greater coverts lutsrous greenish black, and the lesser coverts the same or edged with red. The whole presents a solid built bird, red or orange and black above and black beneath, with handsome red wings beautifully barred with black.

The hen is clad in a rich brown garment, nearly every feather of which is handsomely penciled with darker brown, or, what in many cases would be more accurate to say, with black. The general brown colar becomes upon the neck a brilliant ruddy gold, with a broad black stripe down the center of each feather, which may or may not be slightly penciled. The main tail-feathers are black, the upper ones and the coverts being penciled, Given a good rich body color, the beauty of the hen depends largely upon the completeness with which she is penciled. Back, body, breast, throat, wings, and even the feathers upon the shanks and toes should be thoroughly penciled.

The character of the penciling is similar to that of the Dark Brahma, and the darker lines should follow the outlines of the feather. They should be as distinct as possible and not broken and wavy. Accuracy of penciling is a great excellence and atones in the eye of a fancier, for a multitude of faults.—*Poultry World,*

HENS THAT LAY THE MOST EGGS

If it is intended to hatch out chickens in March or April, it is not too early now to separate the flocks and select those that are to be mated together for breeding. If breeding for fancy, reject all that are not true to marking, then all that are not in perfect order and in good style. There is as much in the style in which a perfect cock or hen stands as there is in the style of a carriage horse if the eye is trained to take notice of it. Next, but not least in importance, choose those hens that lay the most eggs, and eggs that are perfect in shell and in shape. Some habitually lay eggs that have rough shells or that are of unusual shapes, and the chances are that if such eggs hatch at all they will produce deformed birds. In mating sometimes a fault in either male or female may be counteracted by a tendency the other way in the opposite sex, as a deficiency of hackle in the Brahma hen may not appear in her chickens if the cock has a very heavy hackle.

When mated, giving as many hens as are thought right to one cock, give them good care, but avoid food that is too stimulating. Give no cayenne pepper or other spice and not much cornmeal. See that they have plenty of exercise, and rather try to make them defer laying until nearly the time for them to lay. If they are pullets, do not save the eggs until they have laid two or three at least. Managed in this way, there is a good chance for fertile eggs and good vigorous chickens. They usually do better to mate the old hens with a young cock and the old cock with the pullets.

If simply raising chickens to replace the old fowls next fall, or for market, it will pay to take very much the same pains in selecting and caring for the breeding stock, except the care in regard to feather markings. There is as much difference in the producing qualities of different hens as there is in different cows, or would be if as much attention had been paid to breeding for eggs as there has been to breeding for milk. The farmer who has a cow that gives more milk than any other likes to raise the calves from her, but if he has a hen that lays more eggs than another he seldom knows it, and when he does he takes no pains to select her eggs to produce chickens from, as he should do.

Those who have incubators and want to raise broilers for market may start them soon if they can get eggs enough, but they should know that they will hatch but a small percentage of their eggs, if they get them from flocks that have been confined nearly all winter, and fed upon warm mashes and patent egg foods. And even the few that do hatch out will seem to be lacking in strength and vitality, and will quickly yield to the diseases of chickenhood.—*American Cultivator.*

FOWLS FOR THE TABLE.

In discussing the comparative excellence of the different breeds of fowls, a correspondent of the *English Live Stock Journal* writes: "Of all table fowls the well-bred Dorking still stands pre-eminent. The reasons for this are: first, it is a large-sized bird, and its meat is tender, savory, and juicy; at the same time, sufficiently firm in texture. Second, the breast is very broad, deep and projecting. This is the most valuable part of the fowl, and in the Dorking enables one to cut extra wide slices from it. The shoulders also are quite full, which is another good point in its favor. Third, the body is a long parallelogram, thus making it in comparison to other fowls like that of the Shorthorn cattle. The Houdan is the nearest approach to the Dorking of all other breeds, both in size, good shape and qualities of meat. As it carries a fifth toe and a top-knot, it is generally thought to be a cross of the Dorking on the Poland; yet I have seen it stated in a French publication that they have been known in France for upwards of 300 years. The game fowl is first quality, but its meat is of different flavor from the two above, resembling that of the pheasant, and for this reason many prefer it. The size varies from large medium to small, and it does not carry so much meat on the breast in proportion to its size as the Dorking and Houdan. This is deep, but more rounding and less projecting. Some other breeds of fowls are well shaped and moderately full in the breast. Among these I have found the Dominique superior. Most of the Eastern fowls are deficient in a good breast, save the Langshan, which is said to be pretty fair in this point. The others, except the Brahma now and then, run too much to rump, where they are extra large. As the meat here is not equal to that on the breast, and is rather coarse, they do not excel as table fowls. But the chickens grow large rapidly, and as people generally are not particular as to the quality of poultry, they sell well and are popular with the public, their extra size being their chief merit."

WHAT FEED IS WORTH.

The department of agriculture in its December report, gives the value of corn to farmers at 39.3 cents per bushel, ranging from sixty to seventy cents in Eastern sections to twenty-eight cents in Nebraska. The average of wheat was 63.2 cents on December 1st, the next lowest being 64.5 cents in 1884, and a year ago it was 83.9 cents. The value of oats was 31.6 cents, nearly the same as last year, rye 54.8 cents, barley 47.2 cents, buckwheat 53.4 cents, potatoes 67.3 per bushel against 37.1 cents last year, hay $8.49 per ton, cotton eighty-four cents,

A REVOLUTION IN KEEPING POULTRY.

The following article, from the *N. H. Mirror* (Manchester, N. H.), is one to which we desire to attract particular attention. The point conveyed by the article is that the present modes of keeping fowls are erroneous, and that it will pay the farmer to keep poultry on the farm, allowing large areas, instead of limiting the hens to small spaces. Read it carefully, and we believe each reader will learn something, or "catch an idea." It says:

"There are, perhaps, hundreds of flocks of fowls that have not laid a dozen eggs since Thanksgiving, although apparently well fed and properly cared for. Of course there is a reason for this condition of affairs, and though a solution may not be found, there is yet something that can be done to avoid the loss.

"The first thing to which attention may be called is the difference in which the hens are kept in the summer and the mode of management in the winter. All birds cease to lay and produce young after the cold season begins, and the hen in her wild, or natural condition, is no exception, but as her characteristics have been changed by domestication she can be induced to lay during every month in the year if she is given suitable quarters and food, and the conditions are favorable. If she lays best in summer it is because the advantages are then in her favor, but if she is to lay in winter her surroundings should approach as nearly to the requirements of the warmer months as possible.

"Feed will not make a hen lay unless the hen herself is in a condition for laying. It is true that food is necessary for the production of eggs, and if plenty of food insured an abundance of eggs there would be no lack of eggs in the winter season, as it would not require a long time for all who are interested to make the discovery, but such is not the case, and the large number of empty egg baskets on farms where the hens have been well fed and cared for is sufficient evidence of the same. Nor is the loss due to lack of warmth in the quarters, as many flocks that have been kept as comfortable as circumstances permitted, and in houses where they were well protected from cold and storms, have been unprofitable.

"As we should reason together on this matter, has it never occurred to those interested that when the snow covers the ground, and the hens must be kept inside of the poultry house, they are prisoners, and almost as closely confined, in some instances, as they would be if they were cooped ready to be shipped to market. The usual allowance of space suggested for a flock of hens is 100 square feet of room for ten hens. This means that a poultry house ten feet square should contain ten hens, and each hen would have a space about 3⅛ feet square, or ten square feet. Such a space is no doubt ample as sleeping room, where the hens are to sit on the roost and have a space before them for breathing, but the hen does something more than simply roosting, for she cannot thrive if deprived of exercise and of her liberty, any better than can an animal, and as she cannot really enjoy her liberty out in the cold, it is plain that some change is necessary in the mode of keeping her indoors.

"Would it not be better and more profitable, to abandon the old theories, that hens can be made to pay by keeping them well fed and comfortable in winter (though such are necessary adjuncts to success), and aim to give them more favorable conditions for exercise? Suppose that a flock of hens was kept in a house 16x32 feet, with windows on all sides but the north, would it not pay? Such a house, built after the manner of most poultry houses, would not be very expensive, though it is admitted that it would largely exceed in cost a house of 10x10 feet. If the flock of hens did not exceed ten (or fifteen as a maximum), the ten hens would have 512 square feet, or over 51 feet for each hen. Each hen would then be able to work and scratch, and if the building was well-lighted there would be no desire for more liberty if the floor was kept well covered with litter, and grain or seeds were sought for.

"Those who have seen covered cattle sheds, with plenty of room, and the cattle protected and warm, can easily compare such a condition with cattle kept in stalls. The one was at liberty and the other in prison. The one could move, had freedom, could retire away from its comrades to a distance, or return at will, but the other had nothing to do but remain on a limited area and eat and sleep. Fowls are more active in their habits than cattle and require much more room in proportion to size. When they are closely confined they will not give good results. Confine a hen in a small box or coop, away from the flock, and she will lose flesh instead of fattening. Association is required and desired, but nevertheless there are times when the hen wishes to be away from her comrades, even if only to separate from the crowd. Hens will readily seek different directions when at work, unless induced to scratch together by some choice food not always obtainable, or which is plentiful. At night all will come together and sit side by side on the roost.

"The hens should have more room on the farm. Yards are not suitable for hens in summer, and small houses are not promotive of egg production in the winter. The aim in view is to get eggs, and if a hundred hens are kept under favorable conditions they will give as much profit as two ordinary cows, but the time has come for all to discuss the question whether there has not been a mistake made in not giving the hens plenty of room in winter, and if it will not pay to endeavor to have "summer conditions" when the snow is on the ground. The feed has not been considered in this article, the object being to call attention to the modes of keeping the hens, and for each reader to ask himself why his hens did not lay when eggs were selling at fifty cents per dozen and then let him look at his horse stable, cow shed and poultry house, endeavoring to find the cause of the drawback, and no doubt all will form one opinion—lack of room in the poultry house."

The object of the article is to show that while the conditions may be favorable in summer the fowls are prisoners in winter. Whether it is not better to build larger poultry houses, or provide large covered sheds for winter use, than to give the hens such restricted limits, is brought up for consideration. The cost may be greater, but so will the profit. Nothing is as unprofitable as a flock that does not lay at all, and when the flock is very large the addition of only one egg per week from each hen, with prices up as was the case this season, will be quite a large sum secured during the cold months.

CHICKS IN BROODERS.

How can we advise readers when they ask questions without giving us the whole facts? We are always willing to oblige, but we are compelled to *know* as much about the operations as the reader. A lady at Newton, Ia., asks in regard to chicks in the brooder, saying:—

"I have an incubator. How often should the eggs be turned, and at what time? The chickens do all right until about the seventh day, when their feet begin to shrivel. They grow poor in the body, and finally lose the use of their legs. They get limber at the joints. The chicken lives for two or three days and dies. I keep the brooder from ninety to ninety-five degrees. I have the Plymouth Rock chickens, and keep them in a good, dry, warm house with plenty of sun. Please tell me what is the matter, and what to do for them."

Now, the most important part of the above was omitted—the *kind* of brooder. She does not state if the brooder has *top* or *bottom* heat, and of course we are unable to give an intelligent reply. If the floor of the brooder is too warm the result is usually leg weakness in chicks, and we have no doubt such is the fault in the above case. It is very important for us to know all, if we are expected to assist readers. Remember, we are hundreds of miles from you, perhaps, and have no opportunity of *observing* the operations, hence details are essential.

LICE AND GAPES.

There are those who claim that gapes are caused by lice, and occasionally some bold advocate steps forward in support of the claim. Mr. T. B. McHenry, of Stillwater, Pa., insists that lice cause gapes, and he believes that writers are ignorant on the subject, as he says:

"I think most of the writers on the subject are ignorant of the cause of gapes. I have found by examination, that they are caused by the large lice on the heads of the chicks, and the nearer one can get rid of the lice, the less gapes."

We do not agree with Mr. McHenry as to the cause. We admit that if there are lice there *may* be gapes, as *filth* has something to do with it, but we do not see how the louse, which is an entirely different creature from the gape worm, can, in any manner, propogate gape-worms. Some affirm that the earth-worm also propagates the gape-worm. It may be stated that nearly all worms prefer a damp or moist soil, and which is rich, hence the *conditions* that are favorable to the earth-worm are also favorable for the gape-worm. Salt and lime will destroy both.

THEY SCORE ALIKE.

In the *Poultry Yard* is a long criticism of the method of judging at the New York Show, by Mr. Felch. Leaving out all that he says in order to get at the main point, we take an extract, as follows:

"I say now that I know for a fact that one of these judges, when he scores, scores so close to me that we may be said to score alike. Then, if comparison judging throws us so far apart, and we commence to fall back on the assertion that it is difference of opinion, it is high time we both came back to the score card."

We can affirm and *prove* that *one* judge will not score alike, the same bird, in all sections. The old fad of judges scoring alike by adding up the *totals* is becoming obsolete. As there is seldom a bird at a show scoring less than 85, or over 95, there is only *ten* points difference, and just how to score without being nearly alike is more of a mystery than being alike. The whole system of allotting defects is wrong. No bird should be considered *perfect* in any section, for no bird *can* be perfect in comparison with the ideal. The best bird ever shown should not reach 90 points.

MR. BABCOCK AND REVISION.

Mr. H. S. Babcock, in the *Poultry Monthly*, has the following in regard to the time of the next revision, and it will be well for those interested to understand the matter:

"By this vote, it has rendered the revision of the Standard in 1893 impossible; that is, legally impossible. Had the A. P. A. met in Worcester or Rochester, and repealed the Buffalo vote of 1889, whereby the Standard was to stand unaltered for a period of five years, that is, not until 1894, and had amended the constitution by expunging the clause adopted at Charleston in reference to the Standard, "which may be revised once in five years, and not oftener," the way would have been cleared for a revision of the Standard at Chicago. But, as it has been voted to meet at Chicago, it is to be presumed that those who voted for this place of meeting, did so for the express purpose of *preventing a revision* of the Standard at that time."

With all due respect to Mr. Babcock, we will say that his knowledge of parliamentary practice should have reminded him that a simple *resolution* passed by one meeting may be repealed at any meeting following. The meeting cannot alter its laws without due process, but no meeting can, by a *resolution*, prohibit the work of the next one. If the Los Angeles, Worcester, or any other meeting, had the right to say, by *resolution* only, what should or should not be, so has the meeting to be held at Chicago. If the meeting at Rochester voted to extend the time one year longer for revision, as it is claimed it did, then the meeting at Chicago can make it one year shorter. It will be five years since the Standard was revised, when the Chicago meeting occurs, and the Chicago meeting can pass as many legal resolutions as was done at Rochester. Unless there was some provision of the *constitution* made, Rochester had no right to bind Chicago.

We do not, however, believe it wise to revise the Standard at Chicago. The proper committees have not been appointed for all emergencies, and the work cannot be done thoroughly. We are in favor of waiting until 1894, but it must not be *forced* on the members to postpone action.

CANNIBAL FEATHER PULLERS.

When birds begin to pull feathers from each other there is no limit to their work. One of our subscribers in Pennsylvania had a flock which began to eat each other up, like cannibals. Here is his letter:

"I had a pen of Barred Plymouth Rocks which some time ago began to pull feathers out of each other, and a few days ago they killed one of the pullets and ate a good portion of her before I discovered it."

It is usually when fowls are confined that they begin the vice, and as the hens cannot lay eggs and be constantly making new feathers at the same time, they become useless. It is difficult to effect a cure without separating the hens from each other. When they become so vile at it as is stated above, the best, easiest and surest cure is to put the hens into a pot-pie.

WHICH WAY TO CROSS.

We are often asked which is the better way to mate breeds when crossing them. The following is a sample of many inquiries:

"I want to cross the Brown Leghorn with the Wyandotte. Which would be the better way—to use a Brown Leghorn male with Wyandotte hens, or a Wyandotte male with Leghorn hens."

As we have stated before, crossing the breeds simply destroys the good qualities of both. We have never yet seen any good results from crossing, for just as soon as one begins it he finally gets down to scrubs.

If crossing is insisted upon, however, we suggest the following rules, which will serve as a guide:

First, always select the male from the smaller breed. A cross of Leghorn male with Wyandotte hens will probably be better than the use of a Wyandotte male with Leghorn hens. Yet, something depends on your object in view.

Second, aim to have the breeds somewhat alike in certain respects. Cross yellow leg breeds with breeds that have yellow legs. Never cross a dark leg breed with a breed possessing yellow legs. Use rose-comb breeds with breeds possessing rose-combs, and try and have breeds as nearly alike in color as possible, such as White Leghorn with White Cochin, or Brown Leghorn with Partridge Cochin.

These matters are not very important, as a cross destroys all the real merits of the breeds, but they will at least serve to retain greater uniformity, and make the cross-bred flocks more attractive in appearance.

EATING DISEASED FOWLS.

There are thousands of fowls sent to market that are seemingly healthy, yet diseased, or unfit for food. But very few persons are aware that fowls are subject to consumption, diseases of the liver, scrofula, dropsy, etc., yet such is the case. When a bird is killed the liver should be red when the contents are removed from the carcass. A liver of a pale pinkish color, or which is a yellowish red, denotes something wrong, and when the liver indicates that it is diseased the body is diseased also. Roup is a disease that is in the whole system, yet it is sometimes present in a whole flock before it is discovered. It is a blood disease, but exists in many forms and stages, at times resembling diptheria in children. A bird once affected with roup should not be eaten afterwards, even if apparently cured and in good health. Cholera does not leave any ill effects behind it, yet after it has devastated a flock the germs may be present on the premises. Never use fowls in the family, or sell them to others as food, until satisfied that they are in perfect health.

If you want to raise chicks, do not forget that they are as tender as *babies*. Care is everything.

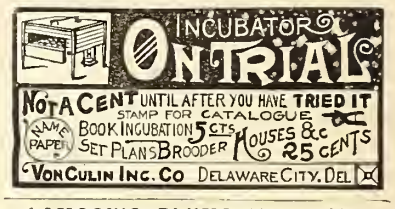
ST. BERNARDS AT STUD.

Ch. Scottish Leader fee $10; Eboracum, fee $40; King Regent, fee $35.

COCKER SPANIELS AT STUD.

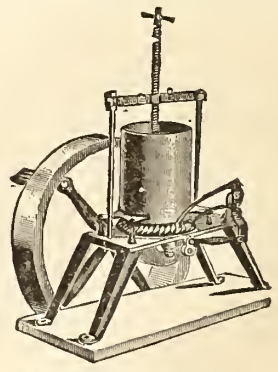
Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free.

SWISS MOUNTAIN KENNELS,
Germantown, Philadelphia, Pa.



LAMSON'S PLYMOUTH ROCKS,
BARRED AND WHITE.
PRIZE WINNERS EVERY TIME. EGGS FROM 30 GRAND BREEDING PENS, at $3.00 per 13. $5.00 per 26. $10.00 per 65. MORE PRIZES GIVEN THIS STRAIN THAN ALL OTHERS. Order eggs at once. Stock for sale at low prices. Fine circular and price list free.

GEORGE L. LAMSON, Jr.
Box 82, WEST BOYLSTON, MASS.



Hundreds of these Bone Cutters sold and sales increasing.

WHY—They are sold at a reasonable price. It cuts all Green Bones **fine enough for small chicks.** It cuts **clear meat, vegetables** to perfection. It has an automatic feed. It takes in a large bone **4x6** inches. It is **warranted** for one year by hand or power. If you can break any part by actual use we furnish such parts free, during this time. It goes at a low rate of freight as cutters are all crated. Knives and cutter-head all one solid piece of chilled steel. Do not buy a Bone Cutter until you get our price. Valuable testimonials, etc. We will furnish you a superior cutter at a price you can afford to pay. Our cutter was entered at Rochester, N. Y., for exhibition and was very highly commended. It was not entered in time for a premium and therefore did not compete for a premium. Get our circular, which shows you good men's opinion on this cutter, by actual use.

WEBSTER & HANNUM,
Caxenovia, N. Y.

Get cir. cut and best of testimonials on our Bone Cutter. Webster & Hannum, Cazenovia, N. Y.

Eggs for hatching, 10 varieties, pure bred poultry. Write, **H. B. SWARNER**, Plainfield, Pa.

Address Frank Buhler for Cata., eggs for hatching a specialty. 1903 N. Western Ave., Racine, Wis.

B. Langshans, R. C. B. Leghorns, S. C. B. eggs, $1.50 per 15. **H. J. AHL, Carlisle, Pa.**

Huguenot P'ltry Y'ds. M. P. D'ks, B. P. R'ks, W. Wyans., Lt. Brahs. C. S. Dorrell, Rossville, N. Y.

Here it is, $1.25 and $1.50 per setting, from choice Bar. and W. R'ks. Samuel Millikin, Brookville, O

B. P. Rocks, Partridge Cochins and Dark Brahmas. Eggs $1.50 per 13. W. E. B. Dora, Loxa, Ill.

S. C. DORKINGS. EGGS $1.00 FOR 13. **J. L. RICE, Rensselaerville, N. Y.**

Our Bone Cutter does not clog with green bones nor meat. Webster & Hannum, Cazenovia, N. Y.

Send 5 cents for new "Treatise on Poultry Culture," "P'ltry Cata. W. D. Forbes, Montowese, Ct.

S. C. B. Leghorns and B. P. Rocks. Eggs $1 per 15. Pleasure P. Yards, Box 34, Marysville, Pa.

For Sale Cheap.—Strictly pure B. Plymouth eggs. Write, H. M. Redelman, Millhousen, Indiana.

B. P. Rocks, Bl. Langshans, G. Wyans. Eggs $1 per 13. Mrs. Sue C. Searight, Carlisle, Pa.

The Webster & Hannum, Cazenovia, N. Y., Green bone Cutter has an Automatic Feed.

Lt. Brahma, $1.50 for 13; S. C. B. Legs., $1.00 for 13, A No. 1 stock. **C. C. CRAVER, York, Pa.**

Eggs $1 for 13. Pure bred Lt. Brahmas and S. C. W. Legs. Mrs. P. W. Hartwell, Le Roy, N. Y.

Eggs. L'd and W. Wyan., B. P. R'ks and R. C. B. Legs., 13, $1; 26, $1.50. Geo. Struble, Pequanac, N. J.

50c. EGGS. My hens lay all winter. S. J. Bishop, Cheshire, Conn.

Buff Leghorn eggs, $2 50 for 13; S. C. B. Leghorn and B. P. Rock, $1 for 13. A. C. Fulton, York, Pa.

17, 3x3 foot, hot-bed, sash and glass, $10.00 cash. L. M. Deved, Phillipsport, Sullivan, Co., N. Y.

Mr. J. H. Smith, breeder of high class poultry. Eggs in sea. 9 kinds. P. O Box 173, Dows, Iowa.

Green bones, meat, vegetables easily cut with our cutter. Webster & Hannum, Cazenovia, N. Y.

Address Mrs. H. H. English, New Palestine, Mo., for pure bred S. C. B. Leg. and Bu. Cochin eggs.

For Sale.—L. B. C'k'ls, $2; L. B. P. R. S. C. B. Legs., eggs $1.50 per 13. Mrs. J. Scofield, Lisbon, Ills.

P. Rock and D. Brahma eggs for hatching. Obwebetuck Poultry Farm, So. Windham, Ct.

Pure green bone meal, Gran. bone and crushed oyster shls. No Chem. J. H. Slack, Bl'msh'y, N. J.

A. S. Swartley, Line Lexington, Pa.—Eggs from prize fowls. 15 Var. $1 per 15; $3 per 52. Cir. free.

S. C. Brown Leghorns, choice stock. Eggs $1 per 15. Pleasure Poultry Yards, Box 34, Marysville, Pa.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

Green Cut Bone sufficient for 80 fowls cut in 10 minutes by hand Particulars free. **WEBSTER & HANNUM**, Cazenovia, N. Y,

Colchester Poultry Yards, Clark H. Otis, Prop., Colchester, Conn. Breeder of Bar. Ply. Rocks exclusively. 8 yards pure bred stock. Eggs $1 per 13.

Leading Strains. S. C. B. Leghorn eggs for hatching, from selected stock only. $1 00 and $1.25 per 15. Address Box 41, New Holland, Pa.

Indian Game and Buff Leghorn eggs, $1.50 per 13. Imported stock. Satisfaction guaranteed. **M. S. PRATT, Fayetteville, N. Y.**

Eggs. S. C. Brown Leghorns, $1.00 for 13; Silver Spangle Hamburgs, $1.00 for 13. **EDMUND HAWKE**, 1108 Maryland Ave., Wilmington, Del.

HOWELL'S Leghorns, White and Brown, won 35 prizes in 1892. Circular free. Eggs $2.00 for 13, $5.00 for 40. **C. E. HOWELL**, Elmira, N. Y.

EGGS.—R. Cap, Golden and S. L. Wyandotte, L. Brahma, B. P. Rock, Bl. Minorcas and P. Ducks, 15, $1; 30, $2 J. D. Brands, P. M., Warrington, N. J.

Ground Green Bone, 2c. per lb. Greyhound Puppies, fawn color, $15; female, $5. Eggs, Ply. R'ks, Pk. D'ks, 13, $2. East Side P'ltry Yds., Olean, N. Y.

FOR SALE, 600 egg Eureka and 200 egg Pineland Incubators, in good order, very cheap. **WM. H. COOK, Newark, Del.**

EGGS FOR SETTING. Lt. Brahma, W. P. Rock, B. Cochin and birds for sale and show stock. None better. J. A. Roberts, Malvern, Pa.

EGGS. B. P. Rocks, S. C. W. and B. Leg., $1 for 13, $3.75 for 65 also fine pullets and cockerels for sale. **F. F. ALDERFER, Harleysville, Pa.**

EGGS express paid. W. and B. P. Rock and W. Wyandotte eggs $2.00; express paid. **A. R. MULLER, Truxton, N. Y.**

Light Brahmas and Houdans, eggs from stock that is second to none. $1.50 per 13, or $3.00 per 30. **J. A. MESSLER, Blairstown, N. J.**

Cheap, durable, practical and warranted. You take no chances in getting our Bone Cutter. **WEBSTER & HANNUM**, Cazenovia, N. Y.

Young chicks just hatched from thoroughbred P. Rocks and W. Leghorns at 7 cents apiece, and eggs for hatching, also a few choice cockerels at $2.00 each. Stamp for cir. Jos. D. Wilson, Rosemont, N. J.

The Cream of the Earth! B. C. B. Legs., B. P. R'ks, Sil. Wyans., P'k Bant. Nothing but high scoring birds in our breeding pens! Eggs and Stock in season. Cir. Clarence L. Smith, Loveland, Colo.

INDIAN GAME EGGS $2.00 per 15, R. C. B. and S. C. W. Leghorn, S. Wyandotte, B. P. Rock, L. Brahma, W. P. Game, Pekin Duck eggs, $1.00 per 15. W. R. CURTISS & CO., Ransomville, N. Y.

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. R. Brabazon, Delavin, Wis.

We save hundreds of dollars to our customers by crating our Bone Cutters so that it goes as 4th class freight. Webster & Hanuum, Cazenovia, N. Y.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

BLACK MINORCAS and **INDIAN GAMES**, other varieties, eggs for hatching. **Rev. L. E. CRUMBLING**, Hall, York county, Pa.

EGGS. Direct from exhibition, Bl. Legs., winners of 1st and special premiums Lancaster, Dec. '92. Eggs $1.50 per set. H. E. Baxter, Ledger, Pa.

WHITE FOWLS, Prizewinners, 92 to 97. Eggs. W. Cochins, $2.50; W. C. W. Polish, $2; S. C. W. Legs., $1.50. Cir. free. Geo. A. Friedrichs, Erie, Pa.

No other Bone Cutter ever won a prize of **any kind** over ours. Beware of other misleading advertisements. Webster & Hannum, Cazenovia, N. Y.

ROSE COMB BLACK MINORCAS AND GOLDEN WYANDOTTES. Eggs, 50c. each. **THEO. CAMPBELL, Lexington, Ky.**

PHILA. Show, Jan., '92, 4 entries, 5 prizes. Phila., Feb., '93, 3 1sts, 2 2ds. Reading, Dec., '92, 21 prizes, R. and S. C. B. Legs., Bar. and W. P. R'ks. Cir. Eggs, $1 per 13. W. W. Kulp, Pottstown, Pa.

AMERICA'S WHITE WONDERS, not excelled by any breed, for beauty, hardiness, egg production and market qualities, large size, extra layers. Circular. Wm. N. French, New Haven, Vt.

W. F. B. Spanish, S. C. B. Leghorns, S. S. Hamburgs and R. C. W. Leghorns. Egg $2.00 per 13. Satisfaction guaranteed, come and see us. Circular. Clark Bebam, Oakland, Armstrong Co., Pa.

S. C. W. LEGHORNS. 788 Sq. ft. floor space. 1½ acres for runs. Birds scored and mated by **J. Y. Bicknell.** Eggs $1 25 for 13. Method of packing **unexcelled.** Circular. **W. W. COLE, LeRoy, Gen. Co., N. Y.**

FISH-SCALE JEWELRY. Elegant, artistic and durable. For price list send to MRS. W. T CATHCART, WASHINGTON, D. C., 516 3d STREET, N. W. AGENTS WANTED.

EGGS for setting from B. Plymouth Rocks, Brown Leghorns and Light Brahmas, M. B. Turkeys and Pekin Ducks, also breeder of Hamshiredown Sheep, English Beagles and Fox Hounds. A. Elwyn Strode, Box 1956, West Chester, Pa.

LEGHORNS! LEGHORNS! Rose Comb Brown and Single Combed Brown, (Croffut and Forsyth strains) and Single Combed White. Eggs and stock in season. **H. B. PINNEY, Calkins, via., Honesdale, Wayne Co., Pa.**

BUFF WYANDOTTES. PLYMOUTH ROCKS. **EGGS** $5.00 for 13, from prize winning birds, while getting, get the best. **J. D. WILSON, Worcester, N. Y.**

KNAPP STRAIN.—W. Wyandottes, S. C W. Leghorn eggs for sitting, **$1 per 13, for incubators in large quantities, $3 per 100 from cross breds. Birds bred especially for laying. Stock for sale. B. H. NOXON, Elm Street, Ithaca, N. Y.**

PEKIN DUCKS FROM THE ATLANTIC FARM won all of the first premiums, one second, one third at the last New York Show. Can sell limited number of eggs from first premium pen as follows, 11 for $2 50, 22 for $4 00, from others 11 for $1.25, 22 for $2.00. Discount by the 100. **A. J. HALLOCK, Speonk, L. I.**

Farm for sale on easy terms, containing 90 acres of Allenwood, near Spring Lake and Sea Girt, N. J. 70 acres tillable, 20 acres in wood, so I suitable for any kinds of crops, good market for poultry, Vegetables and Milk. House, Barn and other buildings. Possession April 1st. Address **R. M. MORTON, 31 W. 65th St., New York.**

BUFF LEGHORNS

The best five per cent. after two years culling.

Choice cockerels. Eggs in season. Parent stock imported by myself direct from **Mrs. Lister Kays'** best yards.

C. W. BISHOP, VERONA, N. Y.

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes**, Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.**, by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

G. M. WOODS & BRO., Leaman Place, Pa. Breeders of high class **Indian Games, Buff and Barred Plymoth Rocks**, have a large stock of **Ind. Games** of the choicest breeding for sale at reasonable prices. Our Games scored another great victory at **Lancaster, Pa., Dec. 21-27**, winning 1st cock, 4th hen, 1 and 2 cockerels, 1 and 3 pullets, 2 and 3 breeding pens and special for best collection. Eggs for hatching after February 15th. Write for prices.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,**
1011 Arch St., Philadelphia, Pa.
145 Grand St., New York.
36 East Madison St., Chicago.
627 Smithfield St., Pittsburg, Pa.
228 N. Howard St., Baltimore, Md.
170 W. 4th St., Cincinnati, O.
Oldest Homœopathic Pharmacy. Established in 1835.

The Poultry Doctor, 85 pp., 12mo, cloth, 50 cents.

NORTHUP'S
Bl'k Minorcas

Have won 133 1st, 96 2d, 12 3d and 2 4th prizes in the last 16 months, competing with all the leading strains and have never lost a special for large size. 1893 catalogue gives dates and places of winnings, and large cut of Rose Comb Black Minorcas.

Geo. H. Northup,
Box 150, **Raceville, Wash. Co., N. Y.**

GOLDEN WYANDOTTES.

GET THE BEST!

The Original, Genuine McKean Strain.

Eggs for hatching, $1.75 for 13, $3.00 for 26, eggs carefully packed in baskets to safely go any distance and hatch well. Breeding and exhibition Golden Wyandottes for sale after Sept. 1st, 1893.

GOLDEN WYANDOOTE CHROMOS size 8 1-2x11 inches, elegantly CHROMO LITHOGRAPHED in six different colors. Price each 4 cents, per dozen 40 cents, postpaid by mail. Orders promptly filled.

A. J. FOUCH, Warren, Pa.

A NEW CATALOGUE & GUIDE to Poultry Raisers, the finest published, containing 8 colored plates and 40 fine engravings of poultry, with description of each variety; tells how to raise and manage poultry, plans for poultry houses, remedies for all diseases, 60 pages 7 x 10. Ready for distribution Jan. 15, '93. Send 10c. silver or stamps. Address,
C. C. SHOEMAKER, Freeport, Ill.

BOOM THE LEADERS!

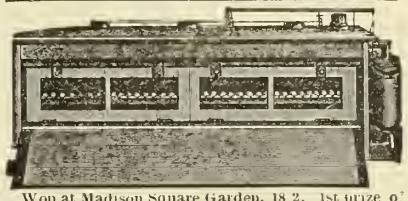
The two best poultry papers on earth are
FARM POULTRY ..... **50 cts.**
and
POULTRY KEEPER ..... **50 cts.**

We will send **both**, for one year, for **only 70 cts.**

I. S. JOHNSON & CO.,
Boston, Mass.

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet with Coating, Caps and Nails. Sample and circular free.
A. F. SWAN,
35 Dey St., N. Y.

Don't get a Bone Cutter with which you are obliged to do all the work with **one hand**, with **ours** you can use **either** hand. Our machine feeds itself. **WEBSTER & HANNUM, Cazenovia, N. Y.**



Won at Madison Square Garden, 18 2. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.
Jas. Rankin, South Easton, Mass.

Why don't you send us $10 and get that Bone Cutter you have so long wanted, and get your hens to laying now while eggs are high, our machine is fully warranted. Webster & Hannum, Cazenovia, N. Y.

If any part of Bone Cutter should break in one year we furnish parts free. **WEBSTER & HANNUM, Cazenovia, N. Y.**

IMPROVED
EXCELSIOR
INCUBATOR

Simple, Perfect, Self-regulating.

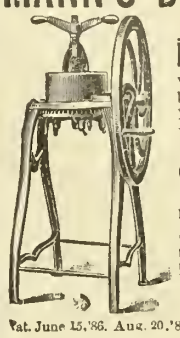
Hundreds in successful operation. Guaranteed to hatch as large percentage of fertile eggs as any other hatcher. Send 6c. for new Illustrated Catalogue.

Patentee and Sole Manufacturer, **GEO. H. STAHL, Quincy, Ill**

Circulars Free.

When you buy a Bone Cutter get one that will cut **clear meat**, the Webster & Hannum does this beautifully, without freezing summer or winter.

MANN'S BONE CUTTER



FOR
POULTRY FOOD

Warranted to cut green bones, meat, gristle, and all without clog or difficulty, or MONEY REFUNDED.

It has been proved
GREEN CUT BONE
is the most economical egg producing food in the world. It will **double the number of eggs**, and make them 25 per cent. more fertile. Send stamp for catalogue. Name this paper.

F. W. MANN,
Pat. June 15, '86. Aug. 20, '89. **Milford, Mass.**

Bone Cutter already for power as well as hand. Warranted not to clog with green bone or clear meat. **Webster & Hannum**, Cazenovia, N. Y.

"Everything For The Poultry Yard."
Poultry and Supplies

MOST COMPLETE STOCK IN AMERICA.

PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.

Our Breeds:—L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.

Do You Want Our Catalogue?

60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.

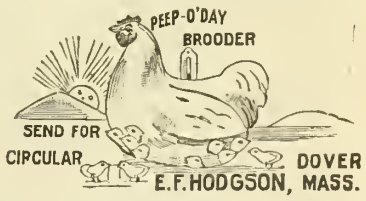
MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.

Hundreds of our Bone Cutters in use. **Webster & Hannum, Cazenovia, N. Y.**

We are So Anxious
That you should see our new circular on
Poultry Supplies.

It illustrates the most complete line ever offered.
FREE
Johnson & Stokes,
—SEEDSMEN—
217 & 219 Market St., Phila., Pa.

The smallest chick can eat cut bone cut with our cutter. **WEBSTER & HANNUM, Cazenovia, N. Y.**



You make a mistake if you buy a Bone Cutter without first getting our circular. **WEBSTER & HANNUM, Cazenovia, N. Y.**

W. F. B. SPANISH. a specialty for 29 years. Average score Ten, last winter 95 17-20. Average score of pen, 96¼. Highest single score, 97. My breeders this season are superior. Eggs at $2.00 per 13; $3.00 per 39. Circulars and my Photo free.

John Bennett,
Sunman, Ripley Co., Ind.

Our Bone Cutter warranted. **WEBSTER & HANNUM**, Cazenovia, N. Y.

THE GREAT AMERICAN TEA COMPANY

A PRACTICAL EVERYDAY
COOK BOOK
FREE containing over 2,500 tested recipes, 320 pages, bound in cloth. Don't fail to get the **WATCH-CLOCK** the greatest novelty of the age. For full particulars address **The GREAT AMERICAN TEA CO.,** P. O. Box 289, New York City, N. Y.

Lt. Brahmas, B. P. Rocks, W. and S. Wyandottes, Ancouas. Dr. S. C. MOYER, Lansdale, Pa.

BUFF LEGHORNS, Red Caps and Minorcas. **A. STILLMAN, Alfred, Centre, N. Y.**

Eggs—L Brahs, B. Coch., B. P. Rocks, S. L. Wyans., $1.50 per 13. O. C. PAULSON, Sharon, Wis.

Barred Ply. Rocks, choice stock, eggs $1.50 per 13. Miss H. A. Heaton, Charlton, Saratoga, Co., N. Y.

WHITE Plymouth Rocks, exclusively. Circular free. **I M GAY, Attleboro, Mass.**

EGGS Ind. Games, B. Ply. Rocks, Gol. Polish, $2 for 13. Greenwich, N. Y. Poultry Farms, box L.

M. C. Smith, Conowingo, Md. G. Dorkings, fine young trios and eggs. Table fowls, good layers.

Choice S. C. B. Leghorn eggs, $1.50 per 13. **CHAS. A. KELLY, Wilsonville Connecticut.**

Eggs for incubators from B. P. R'ks, Langs., cross 2½ to 3 cts each. Edwin Boyer, Thorntown, Ind.

Knapp and Mungers Str. of S. C. W. Legs. Stock and eggs. Mrs. M. L. Belden, La Grange, Ind

W. Wyandottes and S. C. W. Leghorns. Eggs $2 per 13. F. M. YOUNG, Arbutus, Md.

WM. S. FOLEY, Morris, Ills., breeder of ten leading breeds of pure-bred Poul. Price list free.

S. C. B. Leghorns, choice birds, $4.00 per trio. Eggs $1.00 per 13 W. T. BALL, Moline, Ill.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

A. P. ALLEN, Meadville, Pa. Pekin Ducks and S. C. W. Leghorns; 13 eggs $1.00. Cir.

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

BUFF LEGHORNS that are Buff. Circular free. Send Geo. S. Barnes, Battle Creek, Mich.

B. P ROCKS exclusively. Eggs $1 for 13 **W. E. SNAVELY, Hudson, McLean Co., Ill.**

BUFF WYANDOTTES. J. D. WILSON, **P. ROCK** fowls and eggs. Worcester, N. Y.

Buy Brown Leghorn eggs from prize takers, $1.50 per 15, $2.00 per 30. E. B. Murphy, Carmel, Ind.

Barred Plymouth Rocks. Egg $1.50 per 15 or $2.50 per 30. **H. K. STORR**, New Holland, Pa.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY & WATERS, Buffalo, N. Y.

Do you want the best? Send for my I. Game Cir. New idea. W. A. Williams, Rome City, Ind.

DR. JOHN W. KING, Kent, Conn., breeds the **best** W. Leghorns, L. Brahmas and W. P. Rocks.

EGGS.—B. Legs, I. G'ms, Wyans., P. R'ks, G'ms, B. Cochs. John P. Smith, North Branch, Mich.

Eggs for hatching from 11 varieties of pure-bred poultry. Write **J. O. Bartlett**, Lancaster, Wis.

EGGS!—B. P. Rocks, B., W., Buff Leghorns. Winners at Ind'p's, '93. Cir. O. P. Phillips, Amo, Ind.

Ind. Games. (Agitator Str.) Eggs now, stock in fall. Wm. Stocker, 94 S. B'd'y, **Denver**, Col.

Indian Games, B. Leghorns, Poland China Swine. Eggs in season. Summers Bros., Markle, Ind.

Indian Games; fine matings. Eggs $2.00 per 13. **Jonathan Summers**, Browns Corners, Ind.

I breed the very best S. C. B. Leghorns and S. S. Hamburgs eggs $1 per 13. A. L. Cary, Lewis, Ohio.

J. McFarland, Vallonia, Pa. Indian Game fowls and eggs, $2.00 per set. Eng. Beagle pups in Apr.

Jumbo Imported I. Games, stock and eggs for sale cheap. P. O. Hopkins, Hammansburg, Ohio.

Light Brahmas Exclusively. Eggs $2.00 for 13, $3.50 for 26. D. M. POLING, Van Wert, O.

Munger and Forsyth S. C. B. Legs. score 95½, eggs $1.50 per set. Cir. A. Kinzey, Douglass, Kan.

Mammoth Lt. Brah. exclusively. Eggs $1 per 13. Andrew M. Gallagher, Box 417, Norristown, Pa.

Prize winning I. Games, eggs $2. S. and G. Wyandottes. **I. M. INGALLS, Middletown, O.**

Prize winning B. P. Rocks and B. Cochins. Eggs $2 per 15 $3.50 per 30. M. L. Edson, Jacksonville, Ill.

Single Comb W. Leghorns, eggs from choice stock, $1 per setting. Hurlbert Bros., Cuyler, N. Y.

Silver Laced Wyandottes, thorough breed stock. Eggs $1.50 per 13. Jno. Wurster, Keokuk, Ia.

SEE HERE. 39 pure bred Rose Comb Brown Leghorn eggs $2.50. J. H. Kaufman, Gardner, Ill.

SILVER SPANGLED HAMBURG EGGS, one dollar for 13. **JAS. MAYO, Pittston, Pa.**

WYANDOTTES. Silver only. Eggs $1.50 per 13. Cir. free. **Robert Murphy**, Hukle, Kan.

W. P. Rock eggs for hatching, heavy vigorous stock Cir. Brookside Poul. Yards, Rocky Brook, R. I

All Spangler Etters, York Co., Pa. Indian Games. Circular, 15 varieties, thorough bred poultry.

Buff Leghorns, very fine. Eggs $3 per 15. Mam. B. Turkeys. F. C. Whitemarsh, Cuyler, N. Y.

BUFF LEGHORNS.—Eggs $3 for 13. **GILBERT CARPENTER, Cazenovia, N. Y.**

EGGS.—Knapp Bro's best stock, S. C. W. Legs. at $1.00 per 15. C. M. Wood, New Woodstock, N. Y.

Eggs for hatching, six best varieties. Stamp for Circular. J. HEAGY, Trindle Spring, Pa.

J. J. Fleck, Tiffin, Ohio. Prize winners. Imp. I. Games and W. Legs. Eggs for hatching. Cir

Rose Comb Brown Leghorn and B. P. Rock, eggs $1 per 13. E. B. Ketcham, South Haven, Mich.

Rose Comb Brown and W. Leghorns and Silver L. Wyans., 15 eggs $1, 30, $2. J. W. Cook, Poneto, Ind.

S. C. B. Leghorns only, best Strains and finest birds, Eggs $ per 13. **Eugene Keith** Nelson, N. Y.

THERMOMETERS, accurately tested, for Incu. Cheap. T. Rackham, 245 E. 56th st., N. Y. C.

Valley View Poultry Farm Belleville, Pa. B. and Wild Turkeys, leading varieties poultry. Cir.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Eggs from choice B. Langs., B. P. Rocks, L. Brahs. and S. L. Wyans. Edw. Boyer, Thorntown, Ind.

Improved S. C. B. Leghorns. Eggs for hatching, 13 for $1, $26 for $1.00. J. B. Bair, Belvidere, N. J.

Keller's Gol. Wyans. win at all shows. Eggs $3. 9 yards. Cir. Ira C. Keller, Prospect, Ohio.

E. T. L. Benedict, East Poultney, Vt., breeds W. P. Rocks, exclusively; eggs $1.50 for 13.

A. J. MOWRY, Milan, O. **Cor. Ind. Games**, pen Imp. and select birds. $3 for 13 eggs, pen Choice Birds, $2 for 13 eggs.

Light Brahmas. Strictly thorough-bred. First prizes in the strongest competition, great layers. Egg $2 per 13. L. R. Whitaker, Brighton, Mass.

Prize winning S. and W. Wyans., I. Game and P. Ducks. Stock and eggs for sale, send for Cir. **M. H. LEIDY, Blooming Glen, Pa.**

R. C. Brown Leghorn, B. P. Rock and B. Cochin, eggs $2 per 15, $3.50 per 30. Write **E. D. BURroughs.** Wamsitta Poultry Yard, Buttonwood, R. I.

BEST INDIAN GAMES. $2.00 for 15 eggs. S. C. Brown and . C. White Leghorns, $1.00 for 15 eggs, **JOHN A. MOHN**, Fredericksburg, Pa.

BROWN LEGHORNS ONLY.—Single and Rose Comb Prize strains. Eggs $1.50 for 13. **A. E. HOLMAN, Hammonton, N. J.**

Buff, Brown, Black, White Leghorns. High scoring birds. Send stamp for large Catal. **FAIRY LEGHORN YARDS, Newell, Iowa.**

Chas. A. Snyder, breeder of Black Langshans,Ague better, sure prize winners, eggs $2.00 per setting, 3 settings $5.00. **Waynetown, Ind.**

C. I. Game, Buff Leghorns, B. Minorcas and L. Brahmas, eggs. Hatch guaranteed Circulars. **E. G. MARGUARDT, Burlington, Iowa.**

Daylight Poultry Yards of Leroy, Fla., C. Y. Miller, Prop., breeds 10 of the leading varieties. Eggs for hatching $1 per 15, incubator eggs $3 per 100.

Eggs from Houdans, B. and W. Plymouth Rocks. S. C. B. Leghorns and ouen Ducks Eggs $1.50 per 13 $3.00 per 30. Chas. Hopper, Ashley, Ohio.

EGGS from best Lt. Brahmas and S. C. White Leghorns. (Knapp strain). Satisfaction guaranteed, prices on application. R. E. Avery, Sheffield, Pa

EGGS. Lt. Brahma, B. P. Rock, B. Langshan, P. Cochin, 1 set, $1.25; 2 sets, $2.25; 3 or more, $1 each. W. G. MYER, Madison, Wis.

Eggs from choice birds, I. Game, B. and W. P. Rocks, W. Wyandottes and S. C. B. Leghorns, $1.00 for 13. **JOHN HEYD, Felton, Del.**

Eggs from Lt. Brahmas, $2.00 per 13; Buff Cochins, $1.00 per 13. Pekin Ducks, $1.00 per 13. Address **A. H. JAMES, Great Falls, N. H.**

Eggs from Ind. Games, L. Brahmas, B. P. Rocks and S. C. Brown Leghorns at $3.00 per 13; $5.00 per 26. For sale by S. T. LANTIS, Markle, Ind.

From standard poultry, eggs, choice stock, Black Langshan, W. P. Rock, $2 per 13, $3 per 26. Pair $5, trio $7. Sat. Guar. Mrs. Irene Fleming, Circleville, O.

APOLLO BROODER. Top heat, hot water, hot air attachment, used indoors or outdoors. Stamp. **AYER BROODER CO., Ayer, Mass.**

S. C. W. LEGHORNS, exclusive, no mixing possible, eggs $1.50 per 15, $2.75 per 30, $5 per 100. Western Poultry Farm, Box 583, Columbus, Nebr.

F. B. MINNER, Rechtelsville, Berks Co., Pa. Buff Leghorns, Ind Game, S. S. Hamb., and Red Caps. Eggs for sale. Cir. Stamp for reply

Home of the S. C. Leghorn. Eggs $1.50 per 13; P. Rocks and Lt. Brahmas, Eggs $1.00 per 15. Birds scoring 90 to 95 points. **H. C. HUNT, Delavan, Ill.**

Indian Games (Sharp's and Frayne's) B. Leghorns (Arnold's) Minorcas and Langshans. Eggs $1.00 per 15, $2 per 26. Lance & Co., Washington, N. J.

J. S. BARKER, Northville, N. Y., Blk. Langs., Lt. Brahmas, B. P. Rocks, R. C. and S. C. B. Legs. Eggs $1.00 per 13.

Try the Mercer Yards for eggs from prize Buff Cochin, B. Langshan, B. Javas. $1.00 per set. Cir. Mention P. K. J. R. Richman, Yardville, N. J.

15 eggs for $1.00, Black Minorcas, and Red Caps from Imp. stock pure white P. Rocks, 11 P. Ducks, egg $1. Cir. South Side Poul. Yards, Frankford, N. Y.

$1.00 per 13, W. C. B. Polish, W. P. Rock, eggs S. L. Wyandottes, S. C. B. Leghorns all pure bred. E. S. Lamberson, Frankport, N. Y.

LT. BRAHMAS, White and Barred P. Rock eggs, $2 per 15. White Guinea eggs, $1.00. **MRS. I. L. PARKER, Tracy City, Tenn.**

PIT GAMES ONLY, ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. **IDE ROSSITER, Girard, Pa.**

Barred Plymouth Rocks exclusively. Eggs for hatching from stock fine, large and vigorous. Send for price list. E. G. McCormack, Perryville, Ind.

FREE! Eggs free. Buff Leghorns, Ind. Games and eight other varieties. Stamp for Cir. **Enterprise Poultry Yards**, Annville, Pa.

A. H. ANDERS, Lansdale, Pa., Breeds the best W. Dorkings, W. and B. Leghorns, W. Min. and P. Ducks. Satisfaction guar. Write him.

BEATTY'S PIANOS and **ORGANS** $33 up. Want agt. Cat'lg. **free.** Address DANIEL F. BEATTY, Washington, N. J.

ROSE COMB BROWN LEGHORNS a specialty, also B. P. Rocks. Eggs $1.50 per 13, $2.50 per 30. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

Eggs from B. Ply. Rocks, Lt. Brahmas, Br. Legs., P. and R. Ducks and B. Turkeys. Birds always on hand. A. Elwyn Strode, West Chester, Pa.

E. C. Thompson, Elk Creek, Neb. Breeder of fine poultry, S. C. B. Leghorns, B. P. Rocks and Partridge Cochins. Eggs and stock in season.

W. C. B. Polish, best layers and highest scoring stock 98½. I challenge the world to produce their equal. Eggs. Cir. P. P. Wingerter, Erie, Pa.

WISCONSIN Poultry Farm. High class land and water fowls. 10 pp. Cat. Mention this paper, Harry Bassindale, Somers, Wis.

White Holland Turkey eggs $2.50 per 11, Indian Games $2 per 13, S. C. B. Legs. $1 per 13. Stamp for Cir. FRANK L. MEAD, Norwalk, Ohio.

EGGS $1 for 13. Barred Plymouth Rocks, Light Brahmas and Black Langshans. Choice stock. Mrs. T. A. Shuff, New Berlin, Ill.

EGGS M. B. and W. H. Turkeys, T. Geese, $1.50 per 11. P. Ducks, B. P. Rocks, 5 cts. each. Mrs. G. Huffstetter, Vesta, Ind.

Single Comb Brown Leghorns, prize winners. Eggs $2 per setting, 3 settings $5, 7 settings $10. Send for free circular. H. D. Ives, Cheshire, Conn.

EGGS. G. and W. Wyan., $2 per 13, B. P. R'k., $1 per 13, Ind. Games, $3 per 13. A few fine Cockerels for sale. T. F. Higley, Fairfield Ia.

EGGS FOR HATCHING. Ind. Game $3.00 per 13. Red Caps and Barred P. Rocks, $2.00 per 13 from choice birds. J. S. Manning, Columbus, Wis.

HATTON POULTRY YARDS. 20 Var. pure-bred poultry. Eggs $1 per 13. Send for 24-page catalogue. J. W. Miller, Hatton, Cum. Co., Pa.

Choice Farm Range, S. Wyans., L. Brahs., fine Part. Cochins, eggs $1 per 13. Rabbits, Ger. Hares and Guinea Pigs. A. B. Wingert, Northampton, Ohio.

Fowls! Eggs! P. Rocks, L. Brahs., W. and Gol. Wyans., B. Leg. B. M. Rouen Ducks, P. Guineas, $1 per set. Stamp. Mrs. J. P. Hellings, Dover, Del.

Buff Leghorns, Lister Kay Strain, Pure Buff, best in America. Eggs $5. Cockerels and pairs for sale. W. A. MULLIN, Mt. Holly Springs, Pa.

Sand Ridge Poultry Farm, for eggs to hatch, B. P. Rocks, S. L. Wyans., L. Brahs and Buff Cochs. $2 for 15 eggs. Loomis & Hendricks, Rochester, Ind.

DR. WIANT, Marion, Ohio. Sole importer of Geffeken's Buff Leghorns. Eggs $2.50 per 13, $6 per 40, guaranteeing a good hatch. Improved Spongia, great Roup Cure, 25c. 50c and $1 packages.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

$20 PHOSPHATE FOR CORN AND POTATOES. Sold to farmers direct. No Agents. **York Chemical Works**, York, Pa.

ALL THERE! R. C. W. and S. C. B. Leghorns and B. P. Rocks. Eggs $2 per 13. W. Wyandotte and L. Brahmas $1.50. M. Bronze Turkeys. $2.00 per 6 **J. A. MILLER, JR., Reddow, Mich.**

A part of your trade please. Barred Plymouth Rocks, S. C. B. Leghorns. Eggs for hatching, 15 for $1.00 fine stock. Incubator eggs, $3.75 per 100. **G. W. PEABODY, Windham, Conn.**

Buff Leghorns eggs, from my 2d prize cockerel at New York Show. My Buffs are fine rich buff color, all from best Imp. stock and other varieties of fine poultry. E. J. Chandler, Kennett Square, Pa.

Nashoba Brook Poultry Farm, Brooks & Co., Props., East Acton, Mass. Breeders of pure bred and prize-winning Eng. Red Caps and Single Comb White Legs. Stock and eggs for sale. Cir.

INDIAN Game eggs $2.50 per 13, S. C. B. Leghorn eggs $1.50 per 13, B. Langshans, $1.50 per 13 eggs. All thorough-bred stock. **JOHN E. WEST, Columbia, Lancaster Co., Pa.**

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass**

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock, Exhibition birds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

$2.00 Eggs for Fanciers { LIGHT
$1.00 Eggs for Farmers { BRAHMAS
3 Prizes, Boston Light Brahma Show, 893. Write **C. S. NEWELL, Lisbon Falls, Maine.**

Leghorns and Hamburgs eggs for hatching from R. C. W. and B. and S. C. B. and S. S. Hamburgs, 13 for $1.50, 26 for $2.50, 39 for $3, also incubator eggs. HOMER J. BROWN, Harford, Cut Co., N. Y.

Golden Wyandottes. Eggs for hatching from handsome, large, fine, evenly laced Gol. Wyandottes, $1.50 for 13; $2.75 for 26. Orders promptly filled. Stock for sale in fall. Ad. T. H. Hoskins, Warren, Pa.

$15.00 buys the Ohio Incubator, 130 eggs without opening and the chicks separate themselves from egg rack as fast as hatched. Brooder $5. C. D. Purvis, Cardington, O. Box 401.

Golden and White Wyandottes and White Plymouth Rocks. Eggs from choicest stock $1.50 per 13, $4.00 per 39. Chromo Cir. free. See May, 1891, No. POULTRY KEEPER. T. F. Miller, Mattituck, N. Y.

STRANGE, the Poultryman, Betzer, Mich. Eggs $1.00 per 13, $2.5 per 26. Light Brahmas, Buff Cochins, Golden Wyandottes, **INDIAN GAMES.** Prize winners in every yard.

EGGS from Imp. Ind. Games, $2.25 per 13, R. Comb B. Leghorns, R. Comb W. Leghorns, W. F. B. Spanish, L. Brahmas, B. P. Rocks, $1.00 per 13. G. McLEAN, Galena St., Janesville, Wis.

GRAND YARDS Ind. Games, best selected. $4 for 15 eggs. Fine, $2 for 15. B. P. Rocks, best select, $1.50 for 15. Fine, $1 for 15. S. C. B. Legs., $1 for 15. Wm. R. Mennett, Kennedyville, Kent Co. Md.

$1.00 FOR 13 EGGS of S. Wyan., S. C. B. Leg., L. Brah., B. Minorcas. **A. KUNZE, Garden Prairie, Ills.**

Peninsular Poultry Yards, St Ignace, Mich. Eggs from large, hardy, vigorous stock. Part. Cochins, I. Gms. B. P. Rks, B. Minorcas, (extra heavy) W. Wyn, R. Caps, $1 to $2.50 per 13. Cir. M. F. Stellwagen, Prop.

W. & B. MINORCAS. Fine exhibition birds stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

INDIAN GAMES.
Sired by "**J. H. D.**", **and other choice strains. Eggs only $3 per 13. Circular free.**
DAVID C. McELROY, St. Clair, Mich.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

True Buff Leghorn eggs $2.50, C. I. Game egg $2.00, G. Wyandotte eggs $2.00 per 12. No white feathers. Express paid if less than 1,000 miles. **F. A. HOWE, Waterford, Pa.**

ROUP CURE.—A new and scientific remedy for the speedy cure of Roup and Canker, and guaranteed to cure every case. Put up in 50c. and $1 bot. by express only. Half doz. small size, $2.50; large size, $5. Large size will cure 50 cases of Roup. Full directions for treatment with every bottle. Ad. ress **OWSLEY & DUNNINGTON**, Darlington, Ind.

Buff Leghorns, B. P. Rocks, Ind. Games, Opingtons. EGGS $3 per 15 or $5 per 30. Lt. Brahmas, P. Rocks, Wyandottes, Langshans, Minorca, W. and B. Leghorns. Eggs, $2 per 15 or $3 per 26. Cir. Lewis C. Beatty, Washington, N. J.

Buff Cochin, G. Polish, R. Caps, L. Brahmas, W. P. Rocks and Langshan eggs $1 for 13. Toulouse Geese eggs, 20 cts each, Aylesbury Duck eggs, 10 cts each. Farm raised Fox Terriers, the poultryman's friend, cheap. Enoch Parr, Harristown, Ind.

$75 REWARD.

For best birds from my eggs. B. P. Rocks, **GRAND** strain, best layers and weighers in America. Send stamp for Annual. F. Grundy, Morrisonville, Ill.

STOP, LOOK AND LISTEN. $1.00 for 15 eggs. Finest stock of nearly all varieties of Poultry and Pigeons. Buff Leghorns, Indian Games, Wyandottes, etc., etc. Beautiful circulars free. **GEO. B. ULRICH, Annville, Lebanon Co., Pa.**

Eggs for hatching from standard Barred Plymouth Rocks and Silver Laced Wyandottes, Hawkins Strain, extra fine excellent layers, $2 per 13. Mammoth Pekin Ducks, Rankin Strain, $1 per 12. Sussex Poul. Yards, Newton, N. J., A. N. Cosner, Prop

EGGS FROM PRIZE MATINGS, Indian Games, $2, $3 and $5 for 3; Barred Ply. Rock, $1 and $2 for 13; Golden Wyandotte, $1 and $2 for 13; S. C. B. Leghorns, $1 and $1.50 for 13; W. Wyans., $2 for 13. Cat. E. E. Hudson, Kennedyville, Maryland.

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. **G. W. PRESSEY, Hammonton, N. J.**

LOOK HERE. If you want eggs of good stock at low prices, write to **A. F. KIMMEL**, Orwigsburg, Pa., Prop. of The Orwigsburg Poultry and Stock Farm. Cornish Indian Games and all leading varieties. Honest dealing my motto.

J. ALWYN RALL, Summerville, S. C. Won at the "Great Southern" Jan 10-14, 1893. 1st Cockl, 1st pullet, 1st pen, 78 Langshans in class. G. O. Brown and H. S. Ball, Judges. Write him for circular at Charleston, S. C., P. O. Box 43.

CHAUTAUQUA Lake Poultry Yards, mated for best results, choice Golden and White Wyandottes, White Plymouth Rocks and Single Comb White Leghorns. Stock for sale, eggs $1.50 for 13, $2.50 for 26. Circular free. Address **C. A. WELD & CO., Ashville, Chautauqua Co., N. Y.**

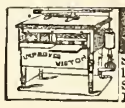
EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

BLACK MINORCAS. Pen 1, first prize cockerels at Detroit, Mich., 95½ by Bicknell; hens with score cards 94 to 96½. Best pen in the West, $2.5 per 13. Yard 2, 10 lb Cock, $1.50 per 13. Barred Ply. Rocks, 2d prize Cock'l, Detroit. Elegant hens $2.50 per 13. Yard 2, 9¾ lb Cock'l 90½, $.00 or over Pullets, $1.50 per 13. **PENINSULAR POULTRY YARDS, St. Ignace, Mich.**

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and receipts for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn

PEERLESS HATCHER

Perfect in every respect and reasonable in price. High-grade Poultry and Eggs for sale. Send 4c. for Illust. Catalogue. **H. M. SHEER & BRO., Quincy, Ill.**



IMPROVED VICTOR INCUBATOR. Simple, easy of operation, self-regulating, reliable, fully guaranteed. Send 4c. for illus. Catalogue. **Geo. Ertel & Co., Mfrs, Quincy, Ill. U.S.A.**

POLLARDS' PEKIN DUCKS
are **PROFITABLE POULTRY. 300 EXTRA LARGE, VIGOROUS BREEDERS. EGGS, $1.25 FOR 12. $6.00 FOR 100. $55.00 FOR 1,000 GEO. H. POLLARD, POULTRY DEALER, PAWTUCKET, R. I.**

Concord Poultry Club will sell eggs from choicest prize-winning Cochins, Brahmas, Langshans, Leghorns, Ply. Rocks, Houdans, I. Games, Wyandottes, W. C. B. Polish and Minorcas. Club composed of thirteen members, each member makes a specialty of one and not more than two breeds. Eggs $2 and $3 per 13. Jas. A. Tucker, Sec'y, Concord, Mich.

PRINCES BAY POULTRY FARM, D. A. MOINT, Mgr., Princes Bay, N. Y., breeds **Ind. Games, P. Rocks W. Wyans., L. Brahmas, Mammoth Pekin Ducks, W. Turkeys** and **W. Guineas. On 14 entries at New York and Philadelphia, 1892, won 8 1st prizes. Send for Circular.**

Light Brahmas and P. Rocks.
EGGS FROM FIRST-CLASS YARDS, $5 Per 15; $10.00 per 40. Other yards $2 per 15. Incubator order all P. Rock eggs. 9 prizes at New York, '92; 10 prizes at New York, '91. **Chas. M. Griffing & Son**, Shelter Island, Suffolk Co., N. Y.

ARNOLD'S BUFF LEGHORNS
are the finest collection on earth, and you will miss it if you order eggs or stock before sending a 2 cent stamp for our new catalogue containing colored plate of Buff Leghorns, and the grandest lot of testamonials ever seen. Eggs $3.00, $5.00 and $10.00 per 13. Address **A. D. ARNOLD, Dillsburg, Pa.**

MAPLE FARM DUCK YARDS.
The Largest Duck Farm in America
Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices **JAMES RANKIN, South Easton, Mass.**

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN** and **WHITE LEGHORNS, BLACK, BUFF** and **PARTRIDGE COCHIN.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

ONLY 150 birds left, Buff Cochins, Lt. Brahmas and B. Langshans. Don't you think it a good investment to purchase a few of them at **only $2.00 each.** This is a bargain as they are all my choicest stock. Just send your order and I will select the birds to suit you. Send for circular of the best White washer and Vermin Exterminator in the world. **W. C. BYARD, Walnut Hills, Cincinnati, Ohio**

EGGS. Langshans, Minorcas, and Anconas, $2.00 per 15; $5.00 per 45.
IND. GAMES, $4.00 per 15. $7.00 per 30.
BUFF LEGHORNS, $5.00 per 15. $9.00 per 30.
BIRDS, Single, $3.00 to 10.00; Pair, $5.00 to $15.00; Trio, $7.00 to $25.00.
Send 4 cents in stamps for Illustrated Catalogue.

C. C. CERTAIN CURE For Cholera, Roup, and other diseases of poultry 50c. per lb. 5 lbs for $2.

C. F. CHICK FEED Is invaluable for young and growing chicks. $3 ℔ 50 lbs. $5 ℔ 100 lbs.

S. S. SURE SHOT Is death to Chicken Lice and all insect life 25c per lb 5 lbs for $1.

Sent by freight or express on receipt of price. (*Sixteen cents extra per pound if sent by mail.*) We ask you to give these preparations a fair trial, and be convinced of their superior merit. Every poultryman should send two cent stamp for circular giving particulars.

F. A. MORTIMER,
Pottsville, Penna.

ST. BERNARDS.
(CHOICE STRAINS.)
PUPS FOR SALE.
Send stamp for circular giving full particulars.
MALES, $20.00 to $50.00.
FEMALES, $15.00 to $35.00.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pidlimmon strains. P. H Jacobs, Hammonton, N. J.

EGGS and FOWLS FOR SALE From 50 Varieties. LARGEST RANGE IN THE WEST. My fowls won over 1200 prizes at 10 State shows last fall. For full description send three one-cent stamps and get the finest illus'd catalogue out. 8x11, 32 pages. CHAS. GAMMERDINGER, COLUMBUS, O.

CUT PRICES ON EGGS, from $3.00 and $5.00 per setting. B. Langshan and Buff Cochins, $1.50 for 2 settings, $2.00. W. C. B. Polish, $2.00 per setting. 14 other varieties of eggs from prize winners. Greatest yards known. Stock for sale. Describe your wants. Sends stamp for illustrated circular. H. E. GAVITT & CO. Topeka, Kansas.

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also POWER MILLS and FARM FEED MILLS. Circulars and testimonials sent on application. WILSON BROS. Easton, Pa.

Sweepstakes at Chicago, 1891
B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. F. M. MUNGER, DeKalb, Ill.

LIGHT BRAHMAS exclusively, large size, fine shape, well marked, extra hackles, leg and toe feathers, remarkable layers, almost non-sitte's. Always win in strongest competition. At Bloomington, Illinois, Dec. 1892, 1st on cock, 94½; 1st and 2d on hens, 92½ and 92½; at Indianapolis, Indiana, Jan. 1893, 1st on cock, 92; 1st and 2d on cockerels, 95 and 94; 1st, 2d and 3d on pullets, 95, 94½ and 94½. A prize on every bird shown. Stock for sales. Eggs in season. ALFRED DOYLE. Morgan Park, Ill.

INCUBATORS & BROODERS
PAT'D.

Brooders only $5.00. The best and cheapest ever invented for hatching and raising Chicks, Turkeys and Ducks. 40 First Premiums, 1200 testimonials also eggs for hatching and fowls for sale of 40 varieties. Thoroughbred fowls warranted true to name. G. S. SINGER, Send for Cat'g. Cardington, O.

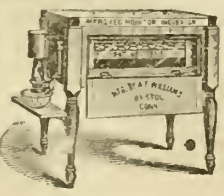
Spratts Patent
Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N.Y

LIKE WILL BEGET LIKE."
700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. At **New York**, Feb. '90, won **1 grand Gold Specials, 8 firsts and 9** seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

SPRAGUE COMMISSION CO. MERCHANTS 218 S. WATER ST. CHICAGO

Reference, P. H. Jacobs.
—SHIP YOUR—
Broilers, Poultry, Eggs, Butter
And all other Produce to us.
We always get the highest market price and guarantee prompt and honest returns. Send a postal card and we will mail you market reports and shipping tags free. Mention this paper.

MONITOR INCUBATOR.
New Model.



The most successful machine in the market, and endorsed by leading Fanciers in this country and Europe, because they hatch strong healthy chicks.
30 First Premiums awarded at the leading shows. Address
A. F. Williams, L. B. 698, Bristol, Conn.

COUPON.
Cut this out and enclose stamp, and we will mail one of our large illustrated catalogues:
Ad. No. 13.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.00, postpaid. They make handsome and valuable books.
Address **Poultry Keeper Co.,** Parkesburg, Pa

ONLY $1.10! CANNOT BE EQUALED!
FARM POULTRY (Monthly) 50cts
POULTRY KEEPER (Monthly) ..... 50 "
FARM and FIRESIDE (Semi-Monthly) 50 "
MODERN COOK BOOK ..... 50 "
Total $2.00
All sent postpaid on receipt by us of cash or stamps, $1.10. Sample papers free. Address
FARM POULTRY,
Box F. P. BOSTON, MASS.

ST. BERNARDS.
Several highly bred brood bitches, some in whelp, and several litters of beautifully marked puppies. Also Ben Ormonde, three years old. At Stud.
SCOTTISH LEADER (23,958), Fee $50.
KING REGENT 21,115, Stud Fee $40
Photos of dogs or bitches 50c. each. Cat. and stud cards with full pedigrees and particulars free.
SWISS MOUNTAIN KENNELS,
Germantown, Philadelphia, Pa.

Wyckoff's S. C. White Leghorns,
America's Business Hen.
Breeding stock carefully selected from over 600 extra layers. Eggs for hatching $2.00 per 15, $3.75 per 30, $5.00 per 45, $10.00 per 100. Send for free, illustrated and discriptive circular.
C. H. WYCKOFF,
GROTON, - - N. Y.

Scribner's Lumber and Log Book.
OVER ONE MILLION SOLD.
Most complete book of its kind ever published. Gives measurement of all kinds of lumber, logs and plank, cubical contents of square and round timber, stave and heading bolt tables, wages, rent, board, capacity of cisterns, cord-wood tables, interest, etc. Ask your bookseller for it, or sent postpaid for 35 cents.
G. W. FISHER, Box 238, Rochester, N. Y.

WINNERS AT BOSTON, STONEHAM and BROCKTON, PLYMOUTH ROCKS, W. WYANDOTTES. Birds for sale. EGGS 1 setting, $2; 2 settings, $3; 4 settings, $5. CHARLES RIVER POULTRY YARDS, Newton Lower Falls, Mass. Send for Circular.

DOG TRAINING and How to Teach Your Dog Tricks. The instructions in this valuable little book are practical and ample for any amateur, and thorough humane. This work also contains a number of remedies for various ailments, and therefore is earnestly recommended to dog owners. It tells how to make a dog Answer to his Name—Give his Paw—Lie Down—Beg—Leap—Jump the Rope—Walk—Dance—Fetch and Carry—Bring his Tail in his Mouth—Roll a Ball—Walk on Stilts—Walk on Forelegs—Stand on Head—Sing—Make Believe Dead—etc. etc. Postpaid for 15 cents. Address Poultry Keeper Co., Parkesburg, Pa.

It's a Fact
that Emery S. Pugh's strain of
Black Minorcas and Golden Wyandottes
always win whether exhibited by myself or my patrons. They have won highest honors the past fall and winter at Syracuse (N. Y. State Fair), Albany, Gloversville and Canastota, N. Y., R. I. State Fair, R. I. poultry show, at Waterloo, Iowa, Denver, Col., and other shows. I lead on these two varieties and have probably imported more and better Minorcas the past year than any breeder in America. Eggs for hatching from my imported and prize winning birds. Also Barred and White Rocks, Part. Cochins and Pekin Ducks. Send stamp for my handsome 24-page catalogue.
EMERY S. PUGH,
Importer, Exporter and Breeder.
UTICA, - - N. Y.

KNAPP BROS.
ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD
WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.
Proof—The records at 29 of the **leading** shows during the past ten years—**Highest Honors every time.** We sell annually **hundreds** of **Exhibition** and **Breeding birds** but **never** at **any** price, our **best** tested **breeding** stock, $99 in **one** order at a recent sale, for 18 show birds. **OUR MATINGS** for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce **sure winners** and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. **100 fine breeding Cockerels,** separate or mated up in **pairs, trios or breeding pens** to suit customers, at reasonable prices for quality. **EGGS** for **HATCHING** from our **choicest matings,** at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address
KNAPP BROTHERS,
BOX 501, FABIUS, N. Y.

BONE AND SHELL FOR POULTRY. **Raw Bone** has been proven by analysts to contain *every part of an Egg—White, Yolk and Shell.* The lime of oyster shells furnishes shell materials. The *granulated* size is for *adult* fowls; the *meal* is for *chicks,* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address
FITCH FERTILIZER WORKS, BAY CITY, MICH.

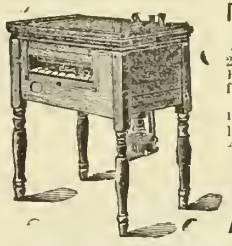
GOSHEN STOCK FARM.
MILLER & HEALD, Proprietors.
BREEDERS OF Light Brahmas, White and Barred Plymouth Rocks, White Wyandottes, A. R. Comb Dominiques, Buff Cochins, W. Face Black Spanish, and B. B. Red Pit Games. Eggs **$1.50** per setting, **$3.** Winners of 9 first and 2 second premiums out of 13 chickens at New Jersey State Poultry Asso., 189?, held at Camden. Well bred broken Beagles, Foxhounds and Collies. Puppies of the above breeds. Call and select for yourself; if not, write just what you want, and if stock not as represented, ship them back. Stamp for 20-page Catalogue. Address
MILLER & HEALD,
Eastern Agents for Croley's Sure Cure for Roup. West Chester, Chester Co., Pa.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,
ROLLS 150 FEET LONG.

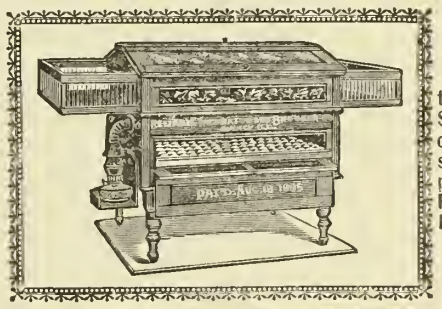
	12	18	24	30	36	42	48	60	72 Inch.
3 Inch No. 18.	.80	$1.10	$1.50	$1.90	$2.30	$2.65	$3.00	$3.75	$4.50 Per Roll.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.40 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.
PETER DURYEE & CO., 215 Greenwich St., N. Y.
SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls.

Three Years in Succession at the Greatest of American Shows: (New York.)
We Have Won All Firsts on Indian Games in the open classes. A record no other breeder of any variety can equal.
At the great show at **MADISON SQUARE GARDEN, February, 1892,** we won **1st** and **5th on Cock; 1st, 2d** and **3d on Hen; 1st** and **2d on Cockerel,** and **1st, 2d, 3d, 4th** and **5th on Pullets.**
CHALLENGE CUPS for best hen and pullet. **GOLD SPECIAL** for twenty best young birds, and all other specials.
At Philadelphia our Golden Wyandottes won all firsts and seconds.
We breed **Champion Red Caps, Andalusians, Black Minorcas, White Ind. Games, Creve Coucrs, Aseels and Pekin Ducks.**
Stock and eggs always for sale. Twenty-page Catalogue free.
C. A. SHARP & CO., Lockport, New York.
The Home of the Indian Game.



The Prairie State Incubator takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 28th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $2.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.
Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
Homer City, - - - Penna.



The World's Fair Hatcher.
Our Incubator will be in constant operation at the WORLD'S COLUMBIAN EXPOSITION. The most perfect machine ever offered the Poultry Fraternity. Send 4c. stamps for descriptive Catalogue. It will pay you. "40" Yards of High-class Poultry. Illustrated Poultry Catalogue FREE. Address
Reliable Incubator & Brooder Co.,
QUINCY, ILL.
Mention Poultry Keeper.

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.
It is acknowledged to be "The Best Poultry Magazine Published" in the world.
Send for Index to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. Subscriptions can begin with any back number you desire.
Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? Do you care to learn how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "What has been done, can be done again." Remember the price; 50 cts. one year; six months 25 cts; sample free. Remit cash or stamps. I. S. JOHNSON & CO., Boston, Mass.

HAWKINS BREEDS AMERICA'S BEST
More Prizes Awarded This Strain Than All Others.
PLYMOUTH ROCKS AND WYANDOTTES
EGGS FROM FORTY GRAND **BREEDING PENS**
1 setting $5.00, 2 settings $8.00, 3 settings $10.00, 5 settings $15.00.
Selected Breeding Birds for Sale.
Catalogue of America's greatest Poultry Farm free.
A. C. HAWKINS,
Lock Box 4. LANCASTER, MASS

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Lice in the Incubator.—What is best to kill lice in an incubator? Do you know of any solution with which I can wash every egg?—M. F., San Francisco, Cal.

Add a teaspoonful of ammonia to a quart of strong soapsuds. Wash the eggs in the suds and rinse in two waters. Fumigate the incubator for an hour with burning sulphur.

Climate and Houses.—1. Is this dry climate and high altitude necessarily unhealthy for poultry? 2. Do you consider a house built in an embankment, not lined with boards, as healthy a place as a house built of boards and on level ground? 3. Is it necessary to feed laying hens oyster shells if they have cut bone?—W. D. S., Helena, Mont.

1. We see no reason why your climate should be unfavorable. 2. The board house is better. 3. They are unnecessary if bone is allowed.

Dubbing Games.—When should Game Bantams be dubbed, and how should it be done?—J. G. S., Oakdale, Pa.

It is performed when they are about three or four months old, or when the comb is fairly well developed. Use a sharp knife or shears, and dip the head in strong alum water.

Moisture in Incubators.—1. When incubators are used in a medium damp cellar, is there any need of moisture in them? 2. What is the best way to prevent egg-eating? 3. What is the best food for very young chicks? 4. What is the best egg-producing food? 5. Is there any necessity for cooling eggs in incubators.—W. G. B., Nobscot, Mass.

1. Give no moisture first two weeks, and then only a little the third week. 2. See first page, this issue. 3. Give rolled oats, bread crumbs, bone meal and seeds. After tenth day give wheat, or anything they will eat. You should have October, 1892, issue. 4. Fresh meat and bone. 5. There is no necessity for so doing.

Medicines.—1. How much tincture of nux vomica in a quart of water for indigestion? 2. Can I obtain the tincture of spongia by mail? 3. Would tincture of spongia be cheaper than pellets? 4. Would a cross of Black Minorcas and White Leghorns be a good one for layers?—R. G. McE., Falls Church, Va.

1. Ten drops. 2. Glass is not allowed in the mails. 3. The pellets are fully as good and as cheap. 4. The cross would give no advantage over the pure breeds.

Lice.—My fowls are troubled with lice and I cannot get rid of them. I think the large lice is the kind we have to contend with. I have no trouble to get rid of the mites.—L. B. C., Galt, Cal.

Rub four or five drops of sweet oil well into the skin of the heads and necks twice a week until the lice are destroyed. Two or three applications will suffice.

Which Kind?—To mate with Plymouth Rocks, which would you prefer, the single-comb or rose-comb Brown Leghorn male?—E. B., Aniwa, Wis.

As the Plymouth Rock has a single comb, we would prefer the single-comb Brown Leghorn.

Wyandottes.—Which variety of Wyandottes is the best for laying?—W. Y., Granite Falls, Minn.

There is no difference in the Wyandottes except in color.

Picking Pekin Ducks. — Will the Pekin Ducks lay if picked during the summer or spring.—G. W. S., Leon, Ia.

If the feathers are "ripe" they may be picked, but as they cannot lay and make new feathers at the same time, the picking of the ducks may retard laying. In the spring they may take cold. The best time is just when they begin to moult.

Drinking Vessels.—1. Where can I get drinking vessels? 2. Will you describe some cheap ones? 3. Will an earthen dish with a perforated tin cover answer?—A. W., Conover, O.

1. They are sold by all seedsmen. 2. We are always doing so. Our September, 1891, issue is full of them. 3. Yes.

Brown Leghorns.—1. Which is the least liable to sit, the Brown or White Leghorn? 2. Are they as hardy as any other breed? 3. Which breed makes the best layers? 4. Are there any breeds that lay better than the Leghorns?

1. Neither should sit, and there is no difference between them, but any kind of hen will sit when she becomes too fat. 2. Hardier than some, but perhaps no equal to the Cochin or Brahma in that respect. 3. It is not known, as many of them equal each other. 4. We believe the Leghorns equal to any others.

Ducks.—Will it pay to hatch and raise ducks the entire year?—S. B. C., Detroit, Mich.

It would, perhaps, as the prices seldom get below fifteen cents per pound in New York City, but ducks do not lay at all seasons, and the eggs would be difficult to procure.

Crossing.—1. How many hens should be with one male? 2. How are the Black Langshans to cross on common hens? 3. Are they hardy and good layers?—E. N. K., Jr., Walcott, Ind.

1. About ten is considered a fair proportion. 2. Any cross on *common* hens is an improvement. 3. The Black Langshans are hardy, good layers, and the result will be excellent.

Markets.—Are there markets in St. Louis, Kansas City, or Minneapolis for broilers?—P. W. F., Oskaloosa, Ia.

Any large city is a good market. We do not know anything of the prices usually paid in those cities, but we are satisfied that they will take all the broilers sent to them.

Sunflower Seed.—1. Should sunflower seed be thrown in litter, or fed in the soft food? 2. Has it much value for fattening purposes? 3. Can it be ground into meal? 4. How much should be fed twelve hens? 5. How can I shell it out of the heads?—R. G. P., Adams, Ind.

1. Throw it in litter. 2. It contains a large proportion of oil, and is nearly the same as linseed meal. 3. Yes. 4. One quart to twelve hens, three times a week. 5. There is no method but to pound the heads, or let the fowls pick off the seeds.

Bowel Disease.—My little chicks have bowel disease, the vents being clogged; they droop and die in three or four days. The weather here is nice, and they have dry quarters.—G. G., Shreveport, La.

Due to lack of warmth at night, though it would be well, also, to look for lice, especially the large lice. The only remedy is to give plenty of warmth.

Lump.—One of our hens has lately developed a lump, as large as a man's hand, on her back, near the tail feathers. What would probably have caused it.—O. L. W., Saddle River, N. J.

It may be due to an injury of some kind. The best mode is to destroy her.

Droppings.—Why not spread the poultry droppings where they are wanted, at time of removal. Would not that be a good plan?—T. E. P., Youngstown, Ia.

We adopt that method, and consider it about the easiest, cheapest and best plan, at all seasons of the year.

Roupy Stock.—Would hens or pullets which have recovered from roup or canker be suitable to breed from?—J. C. R., Westminster, Mass.

There is always an *inherent* tendency or liability to disease, and we would not advise the use of any but healthy and vigorous stock.

Leg Weakness.—What is the cause and cure of leg weakness in chicks that are about two weeks old? Their legs draw and they walk on their ankles. They are fed meat, bone, and a variety.—O. E. H., Holliday's Cove, W. Va.

It may be caused by damp quarters, by bottom heat brooders, or by very high feeding. If by feeding or forcing, they will recover.

Chick-a-Dots.—1. What time of the month is your paper published? 2. Have you ever heard of a breed of fowls called "Chick-a Dots?" 3. Are malt skimmings fit for fowls?—H. E. C., Clyde, N. Y.

1. We usually aim to get the paper out before the 10th of the month, but we are not always able to do so. 2. There is no such breed. 3. They may be used as a part of the ration.

Bone Mills.—1. Will it pay to buy a bone mill where fifty or one hundred hens are kept. 2. Is the $5 mill advertised in your paper a good one? 3. Do lice bother chickens in winter?

1. You could hardly get along without one. 2. The $5 mill is for grinding shells and small bones. You should have a bone cutter for green bones. 3. The large head-lice work all the year.

Animal Meal.—How much animal meal should I give to twelve hens, and how much to fifty chicks? How should it be mixed?—Mrs. K. M. C., Cokesbury, S. C.

About one pound to twenty hens or fifty chicks is about correct, once a day. Mix it with ground grain, or anything, and be careful to leave off some other food, or you will make your hens too fat.

A Crowing Hen.—What shall I do with a crowing hen? I have a well bred Black Spanish hen and do not like to kill her. She has started to crow, and her tail feathers are growing in curve like a cock's. She struts about so proudly that the male chases her away as he would another male.—A. M. H., Chicora, Pa.

We know of no advice to give in such a case, as nothing can be done to alter the circumstances.

Hay and Manure.—Does hay that has been used on the floor, and satuated with the droppings, lessen the value of the manure, and can it be used with the manure.—A. K. G., Nichols, Conn.

It only makes the manure more bulky, but otherwise it is an advantage as an absorbent, and may be used with the manure.

Golden Wyandotte.—Is a Golden Wyandotte pure bred if there is a white feather in his tail?—Subscriber.

It is a defect, but does not indicate impurity.

Prices of Broilers.—What was the price of broilers in New York about the middle of March, of this year.—L. L., Bridgeton, N. J.

From twenty-eight to thirty cents per pound for small, and twenty to twenty-five cents for average size. Prices are going up. We quote prices from M. F. Peck, commission merchant, 334 Washington street.

Commission Merchants.—Please give names of reliable commission merchants in the twelve largest cities.—S. E. F., Lebanon, Pa.

We know no more about them than you, as we have no directions, and would have to make inquiries ourselves if we expected to do any shipping.

THE POULTRY PRODUCTS.

We are asked how much is the value of the poultry product of this country. Unfortunately, there is no way of getting at *facts*, but according to the *Journal of Agriculture* the following figures will serve as a guide. For Missouri Labor Commissioner Hall has issued an official map of the State, showing by counties the commodities marketed by mail, river and express during the year 1891. In order to ascertain the amount of surplus in the State, it has been necessary to visit the different railroad and express stations and river landings in the State, and get a classified statement of the shipments made during 1891. From over 2,000 points in the State, surplus products were sent to the markets of the world, and we give below the valuation furnished the bureau, as follows:

Poultry	$2,804,918
Eggs	1,409,043
Total	4,213,961
Corn	3,378,528
Oats	1,288,175
Total	4,666,703
Coal	3,488,058
Iron	295,335
Total	3,983,393
Lead and zinc	4,740,300

It will be noticed that the total value of poultry and eggs exceeds that of corn, and is nearly equal to both corn and oats, and that it exceeds coal and iron.

If we use the State of Missouri as an example of the average (admitting that some States produce more and some less), and multiply the total by 44 States (leaving out the territories), we have a total value for the whole country of over $185,000,000.

As the *Journal* also remarks, in the production of coal, iron, lead and zinc, skilled labor and costly machinery are required, machinery that is not only costly in the worth of the material from which it is manufactured, but also in the time and study it has cost to produce the finished article.

The production of corn and oats also calls for skilled labor and costly machinery. Most of this machinery can only be used for a few days during the year, the balance of the time it sits idly in a shed that in itself has cost more than the price of a good hen house.

The production of poultry and eggs for market is mostly woman's work, and work that she does as a side issue to her regular house work. It is not recognized as an industry, profession or business, it is only just a part of her day's duties and comes in along with cooking, washing dishes, making beds, sweeping floors and keeping the children tidy. Yet when the Labor Commissioner adds up his figures of the surplus of poultry and eggs shipped to the markets of the world, he gives the State a credit of $4,213,961. This is not surplus from merely the home family consumption, for one must remember that the city dwellers, hotels restaurants, etc., consume vast quantities of the poultry and eggs taken from the home farms before there is any surplus to ship.

The *profit* on the poultry products is great. The figures above show what has been done as a "side business" on the farm, in poultry. If poultry was made a *business*, what an enormous source of wealth it would be to the whole country.

MONSTROSITIES AT SHOWS.

The "fancy" fowl was displayed in all its glory at the recent shows, and the uselessness of some of the *ornaments* is more apparent as each year rolls by. There is nothing in the shape of solid *improvement* in some of the breeds, and in many cases the greater their "fancy" value the smaller their real worth.

Just about now the Cochin breeders are dividing on the question of "heavy feathering" or "no heavy feathering," and whole columns of valuable space are being wasted to prove something that is not worth proving, for all of this feathering is not for the body, but for the *legs* only. So heavy was the feathering on the legs of some Cochins at the shows that a novice would be compelled to look closely in order to find any legs at all. Only a head on the top of the mass of feathers, the larger portion of the feathers being *under* the fowl instead of on it.

Another "beauty" occasionally seen is the "Naked-neck" fowl. They look as if their necks had been scalded and then rasped and sand papered, their value as "fowls" not being considered at all. Just why one breed should have no feathers on its neck, while another breed should be buried in feathers is unknown, but such is (poultry) life.

For want of space to attach a few more feathers one breed has a tail to long that it trails on the ground, like some lady's dress. A flock of such fowls would be found very useful where persons are careful to look before they step, as it would not do to tread on their tails, for fear of injuring them for the show room.

Some poor birds are compelled to wear crests on their heads; a flock of them, with the male at their head, appearing like Scotch Highlanders, with the drum-major leading. They have eyes, but the eyes are supposed to be of no consequence, as but a speck of light sometimes can penetrate the mass of darkness surrounding the heads.

The chief requisite in the male of one breed is that he has what is called a "hen tail," but whether it is an advantage to him to possess a tail like a hen is not for him to decide, but it is certainly a shame to disgrace a bird in that manner.

A goose is supposed to be more valuable, with one breed, if it has a knob on its beak, while one of the breeds of fowls has a clean head and a comb like two horns. Beards are worn by some breeds, and others are compelled to carry five toes, instead of four, on each foot.

All this *monstrosity* breeding is styled "fancy," and the *practical* part is for *farmers* and such like.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Scribner's Lumber and Log Book, Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks (Jacobs).

VOL. X. PARKESBURG, PA., MAY. 1893. No 2

CONTENTS.

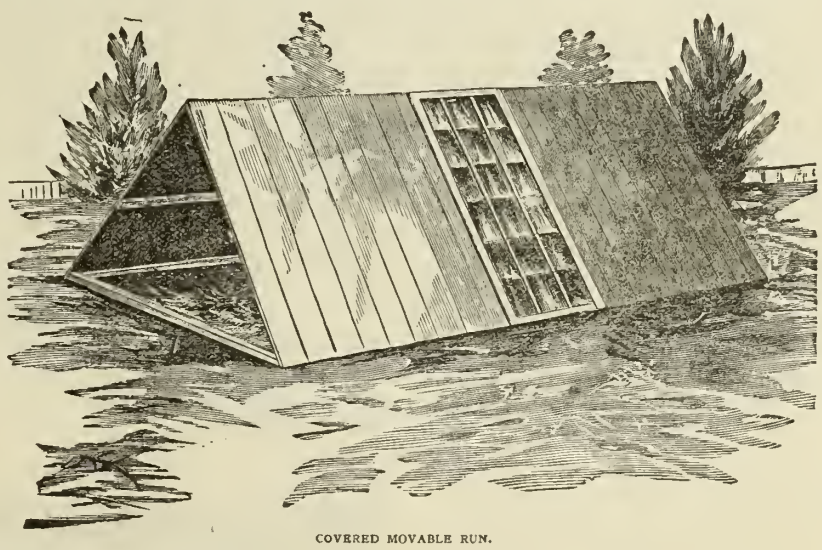
A Covered Movable Run, (Illustrated)—Brilliant Whitewash—Hawks and Crows—Heavy Rain Storms—Oil of Eggs—Cross-Bred Fowls—Poultry in France. 17
Errors of Breeding—A Home Made Feed-Cutter (Illustrated)—Only a Speck—Portable Panel, (Illustrated)—Can He Do It?—Broilers and Eggs—How to Ask Questions—Feeding too Often. 18
Mr Kellar's Golden Wyandottes, (Illustrated)—Wants to Know How—Why the Chicks Die—What to Do When Prices are Low—Why Your Chicks Die—Keep it Up. 19
Crop Bound and a New Crop—Millet Will Raise the Chick—White Leghorns in a Cold Climate—One of the "Wimmen" Replies—Preserving Eggs—How He got Good Hatches—Prevention of Egg Eating—Good Hatching—Winter Laying—Odds and Ends—Too Fat—From North Carolina—A Good Cross. 20
Brief Remarks from Readers: Excellent Laying—Early Laying Pullets—Lay Every Day—Made a Mistake—Prefers the Old Style—Adopts the Old Method—Western Prices—Braden and Piety—The Wife and the Hens—Heavy Eggs—A Friend in Need—A Good Incubator Test—Out of Business—Good Laying Brahmas—Poultry Farming—Movable Roost and Nest, (Illustrated)—Chickens vs Wheat—Crossing Fowls for Experiment—Advantages of Small Breeds—Scalded and Raw Food. 21
Fed off their Legs—Success With Turkeys—What is Roup?—Foul Feeding Places—The Vice of Laziness—Decaying Food—Young Ducks and Water—The Sitting Hen and Lice—Lime for Fowls—The Coming of Warm Weather—Keeping Pigeons—Hens Carrying Ducklings—Preventing Laying—Fresh Earth Under the Roosts. 22
Two Kinds of Improvement—The Southern Fancier Suggests—It Was the Eggs—The Way to Rout Lice—How Best to Proceed—Leghorn Broilers—Non-Sitters—Scabby Legs—Meat and Bone—Jewish Holidays and Geese—A Balanced Ration—Destruction of Chicks—Rain Storms—Nux Vomica for Fowls—The Roof and Floor—Are Bantams Profitable?—Grass and Meat—To Set a Hen—How Much Space For a Flock—Using Sunflower Seed—Plymouth Rock and Brahma Cross. 23
Editorial Items—Two Editors, Now—Buying Eggs in May—Colorado Poultrymen—Wants Fighters—Poultry Keeper Special, No. 2. 24
Grading up Poultry—Those Binders—Good for Chickens too—Scratching Places—Uses for Coal Ashes—Tobacco for Gapes—Why Chicks Die in the Shells. 25
Burning Sulphur—Keeping Eggs for Sitting Purposes—Crowding at Night—Slow Growth in Summer—Geese and Ponds—Fineness of Bone—Ducks for Market—Get Them Fat—Signs of Health—Peach Trees in Poultry Yards—Choice Market Stock—What an Incubator Should Do—Summer Feeding Hen Manure—Eggs in Summer—Economy in Room—The Poultry House—Feeding Eggs to Fowls and Chicks—Cabbages for Poultry. 26
How the Poultry Industry is Recognized—Plucking Geese How to Select and Feed—Salt, Pepper and Ginger—Getting Rich on Poultry—Millions of Eggs—Leg Weakness—Care in Keeping Breeds—Mistakes and Omissions. 27
Fowls for Profit—Rare Varieties of Bantams—Frozen Eggs—To Prepare Feathers for Use—A Word to Farmers—Liver Disease—Early Pullets—Amateurs—A Smart Turkey—Judging the Age of Poultry—Broilers Will be High—An English Remedy for Feather Pulling—Moisture and Temperature—Hard Crop. 28
Cater to the Public—Bones and Bone Meal—Advertisements. 29
Advertisements. 30
Advertisements. 31
Bureau of Information—Guineas in the Field—Twenty-five Dozen Eggs Per Day—Moisture or No Moisture—Can Make 500 Hens Pay—Improving Poultry—Publisher's Department. 32

IF you wish a binder, so as to preserve your copies of the POULTRY KEEPER, we have a special one for that purpose. The price is sixty cents, postpaid. It is just the thing, as each copy of the paper should be saved. You can put each month's issue in the binder as fast as received.

POULTRY KEEPER SPECIAL No. 2, is now ready. It is full of valuable information, and is just what you wish. The price is twenty-five cents. In it we reproduce much of that which has appeared in former issues.

A COVERED MOVABLE RUN.

A cheap and convenient covered run for the hens during the occurrence of sudden storms or in winter as a protection against winds, is shown in the illustration. It has no floor, being intended to be easily removed from one place to another, the ground being the floor. It may be made of 2x3 inch scantling for the frame, and may be covered with light half-inch boards, or with any kind of water-proof paper or muslin. The window may be of any size, but the hens prefer plenty of light. The run may be eight feet from the ground to peak, and twelve feet long, or by cutting sixteen-foot boards in half, the upright boards will be the proper length. The run may be attached to one end of a poultry house, to serve as a scratching place in winter. The ends maybe open, or one end closed, as preferred, and it may be easily lifted up and arranged to suit the direction from whence the storm may come. Any kind of cheap material may be used to construct it. We simply wish to give it as a suggestion, trusting that our readers may improve on it.



COVERED MOVABLE RUN.

BRILLIANT WHITEWASH.

Take one-half bushel of nice unslacked lime, slack it with boiling water; cover it during the process to keep in the steam. Strain the liquid through a fine sieve or strainer, and add to it a peck of salt, previously well dissolved in warm water; three pounds of ground rice boiled to a thin paste; one-half pound of powdered Spanish whiting, and one pound of clean glue, which has been previously dissolved by soaking it well, and then hang it over a slow fire in a small kettle within a larger one filled with water. Add five gallons of hot water to the mixture; stir it well, and let it stand for a few days covered from dust. It should be put on hot, and for this purpose it can be kept in a kettle on a portable furnace. It is said that about a pint of this mixture will cover a square yard upon the outside of a house, if properly applied. Fine or coarse brushes may be used, according to the neatness of the job required. It answers as well as oil paint for wood, brick, or stone, and is cheaper. It retains its brilliancy for many years. There is nothing of the kind that will compare with it, either for inside or outside walls. Buildings or fences covered with it will take a much longer time to burn than if they were painted with oil paint. Coloring matter may be put in and made of any shade desired. Spanish brown will make reddish pink, when stirred in; more or less deep, according to the quantity. A delicate tinge of this is very pretty for inside walls. Finely pulverized common clay, well mixed with Spanish brown, makes a reddish stone color; yellow ochre stirred in makes yellow wash; but chrome goes further, and makes a color generally esteemed prettier. It is difficult to make rules, because tastes are different; it would be best to try experiments on a shingle and let it dry. Green must not be mixed with lime; it destroys the color, and the color has an effect on the whitewash which makes it crack and peel.—*New York Tribune.*

HAWKS AND CROWS.

Crows, as well as hawks, will carry off chicks, and the two species of depredators do great damage every year. Just how to catch them or get rid of them is something yet to be promulgated, unless the shot-gun and trap can be brought into use. Poison should not be recommended, as it is dangerous in more ways than one. We believe that when farmers learn that it will pay to provide wire-covered runs for chicks, and protect them from hawks and crows, it will save not only much annoyance, but compel the prowlers to catch mice and other pests instead.

HEAVY RAIN STORMS.

If chicks are caught in heavy showers or storms they sometimes become bewildered, the result being that many will be lost. Unless a box or some kind of cover for them is placed here and there it will require some one to drive them in just before a rain, which is not always desirable, and unless the boxes are large, should a number of them get caught in the rain, they will crowd in the box and trample each other. If the chicks are permitted to roam, these precautions for rain storms must be observed.

OIL OF EGGS.

Extraordinary stories are told of the healing properties of a new oil which is easily made from the yelk of hens' eggs. The eggs are first boiled hard and the yolks are then removed, crushed and placed over a fire, where they are carefully stirred until the substance is just on the point of catching fire, when the oil separates and may be poured off. One yolk will yield nearly two teaspoonfuls of oil. It is in general use among the colonists of south Russia as a means of curing cuts and bruises, etc., etc. —*Druggist's Circular.*

CROSS-BRED FOWLS.

There are many who agree with the *Germantown Telegraph* in its statement that cross-bred fowls are far better and more hardy from the shell than the pure-bred. Following are some of the benefits named by this authority: "We can combine good traits. The Brown Leghorn lays the smallest egg, the Black Spanish the largest. Where merely a commercial egg trade is to be reached, this cross has its marked effects. We may not equal the Spanish eggs as an average, but we make up a sort of middle size—just the size to sell well in market. We can combine early maturity with plump growth. The Asiatic fowl grows slowly, but it counts in weight. It would take too long to get it to a broiler if left all alone; but if we cross a quick grower, the Leghorn, for instance, on these Asiatic hens, we get the quick growth and the body, too. This is indeed a decided advantage.

"Farmers, as a rule, have a collection of all kinds of fowls. Fanciers call them dunghills. Showmen class them as mongrels. But be they what they will, if the males were killed off and pure-bred fowls substituted, there would be more eggs, more spring chickens and better health."

POULTRY IN FRANCE.

In France the fattening of geese for market is the business of men, who do nothing else. They contract with the dealers to get their stock in marketable condition at a certain time for a price agreed upon. France is considered the largest poultry market in the world, the keeping of poultry being done in a manner that makes it pay. It is not uncommon to see the French peasant driving into market a flock of several hundred geese, selling them as we would so many sheep or hogs. There are also many who go among the farmers, pluck the geese feathers and market them on percentage; this gives employment and a living to many poor people.—*American Agriculturist.*

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

ERRORS OF BREEDING.

Eggs and Not Feathers—Our Breeds Should be Improved—How to Begin.

F. L. HOOPER, Baltimore, Md.

In the present state of the fowl family we have specimens of beautiful marking, and also many self-colored and useful fowls. In fact, we have enough of fine-colored specimens or breeds, and the time is about ripe for some intelligent and patient breeder to undertake the creation of a new product in the fowl line that will inherit the many good qualities of the present standard breeds, but with some of their bad and imperfect qualities obliterated, or bred out. We have a few of the new breeds that come up to expectation as a farmer's fowl, but they are made and produced by following the same rut as their predecessors. The breeder, first of all, must make a break from those long established and ancient customs, and let the color line of feathering be dropped, or, still better, allow nature, in her own natural way, take care of this part of the breeding. It produces, otherwise, too much deterioration in its perpetuation, regardless of the good qualities of other important and useful parts, and for the sole purpose of providing a fine and beautiful plumage or covering for these minor parts. The fowl breeders of the modern universe are all in the same boat, or inherit the same fever in this respect. When they are able, or are skilled enough in the production of a new and perhaps an improved breed, they must have beautiful feathers or the breed is worthless in their estimation. They stand alone among the breeders of our domestic and useful animals in their devotion to this part of feather breeding, and unless we break away from this exception, we will fail to make a general-purpose fowl because we sacrifice too many good qualities in a fowl when we are wedded to this feather question, especially when a magnifying glass is frequently used to detect the growth and other defects in feathering.

This color line has been carried so far as to disgust many practical farmers from keeping a better class of fowls. They are proper judges of animated nature. They behold in their surroundings profitable animals, kept on their farms, with no such infatuation for beautiful color of hair, except when they turn to the fowl family. Many of them are convinced, and others believe, that the only good qualities of many of our high-bred colored fowls is in the beautiful laced, striped and variegated coloring of the feathers. They regard these high-bred birds the same as they do our beautiful, peculiarly marked specimens of the pigeon family—more beautiful than practical. The breeder who desires to get out of this long and persistent defect in breeding our present high-bred fowls must not pursue the same course, but break away in his endeavors to originate a new and improved variety. You have plenty of foundation for a beginning, in our present standard breeds, remembering that there is a constant tendency toward this original defect, and the skill and care which were required to develop this peculiarity of feathering will break out and endeavor to perpetuate the qualities bred for, but of which you must ever consign to nature to look after, and give no attention or thought in this respect. What a pity and misfortune that we have not the faintest idea or conception what the original species of the fowl family resembled(not Darwin's origin of the species or the evolution theory), in color of feathering, size, shape and carriage, etc. In color of feathering they no doubt resemble "Jacob's coat of many colors." What pleasure and gratification it would be if we could behold one pair of the original species

But that destroyer of all things,—age, climatic changes, constant removal to and from places of nativity, the art of the breeder in his desire and skill to improve and change, and many other causes too numerous to mention, remove from our sight any correct conception of what they were like. With what pleasure and admiration we turn to the hardy crab apple, and behold the original specie, or parent, of the present Baldwin and Golden Pippin; but when we endeavor to form an image in "our mind" of the original of the species of our domestic animals, the space seems blank, as we have no original existing model to show the lines of beauty, or make hideous to behold, but we have, instead, the living examples of the many improved varieties, or breeds of the original species, beautified, perfected and made more useful in a thousand ways and brought to present perfection by following that natural law which governs the universe—the law of type—when intelligently applied to the system of breeding as carried out or brought to the present high perfection by mankind, and with this perfection as now brought down to the present generation, is it not a fitting and respectful tribute to mankind to further encourage breeding with greater efforts in the same line for higher perfection? Is it nonsense, then, to advocate, preach and beg you to breed and improve, and keep the best now existing beautiful and useful breeds of fowls, animals, etc.?

It must be admitted that the breeders of the improved fowl family, from the first accurate recorded period down to the present modern time, might have accomplished and bestowed to our present generation much better and more useful, but less ornamental specimens of fowls, if color or particular feathering had not played so important a part. This is only a slight hint to the novice, or beginner, in his efforts to produce the best specimen that has not yet seen the light of day.

It may be presumptuous on my part, at this time, to treat the subject upon color line alone, because the friends and admirers are too strongly imbibed, and comprise an army too strongly fortified, to endeavor to convert them to the error of color, when applied in a broad term to the production of the general-purpose fowl, or a market or farmer's fowl and a special egg breed, and we must cast our thoughts outside of the fowl family to find our specimens of useful and superior domesticated animals in which color of hair plays no part, in fact, no consideration.

In and in breeding must play an important part in breeding for particular color of feathering, or perfect self-coloring, and breeders of fowls are certainly to be congratulated that they have produced beautiful feathered fowls, and, at the same time, have not destroyed the vitality or producing powers of the breed itself.

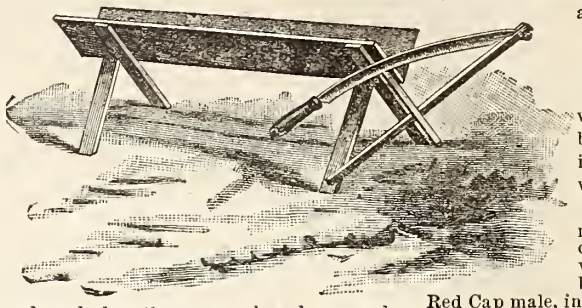
In the production or breeding of other domesticated animals in and in breeding for color of hair, or particular markings of the same, was hardly ever carried into execution or thought of seriously, and if otherwise and accomplished, the variety or particular marked specimen was worthless or inferior when compared with the best specimen of the breed or species.

These remarks are made with the best of intentions, and for no purpose of injury to a single breeder of a pen of standard bred fowls, not a single mention of a variety of pure bred fowls having been made.

I will make a few remarks upon the principles of making an egg-laying breed, the foundation of which must commence with the selection of the best layers, and this selection must be persistently and everlastingly pursued, regardless of a black or a white feather, yellow or pink legs, comb of the smallest size possible; and no waste of material must be allowed to escape in the production of useful parts, not a single feather or point of comb, excess of wattles, or any other useless attachment, except size, must be hitched to the new laying breed. Our object is to originate a superior egg producer, combined with a good, strong constitution, to be able to stand the various climatic changes in which they may be kept Can you produce this quality in your present laying breeds, when you have in your mind not less than a dozen other important parts to look after in breeding your present laying standard fowls? Why, it is simply impossible. You call them a special and valuable laying breed, but you disregard the fundamental principles of breeding that "like will produce like" or the offspring will resemble the parent. You call them the best layers, you publish to the world the fact that they are the best layers, and yet you breed for every other point foreign to egg production. Breed by selection for egg producers, combined with a strong constitution in your breed, and nature will ever be ready to respond to the fact that "like produces like," and your new breed, when published to the world, will triumph over all of the present so called laying breeds and you will benefit mankind by *vos non vobis*—thus you do not labor for yourself.

A HOME-MADE FEED CUTTER.

Those who are interested in the use o chopped clover for fowls, will, no doubt, notice the illustration of a cheap, home-made feed-cutter, sent us by Mr. W. J. Noble, State Center, Iowa. Mr. Noble says: "I am astonished at the great amount of finely-chopped clover that a flock will eat, and for the use of those who desire a cutter, I send the cut of one not new, but which will answer the purpose. To make it, take four pieces of two by four scantling, three feet long, cross them within one foot of the



ends and place thereon two boards, securely fastened, to serve as a trough for holding the clover to be cut. Next, take a stick about one and one-half by two inches, and three feet long and fasten one end at or near the bottom of one of the legs with a bolt and at the other end of the stick make a mortise one and one-half by two inches long to admit the heel of an old scythe which has been bent back and made flat, with a half-inch hole in it to admit a bolt. Have the point of the scythe hammered down so that a handle can be put on it. On the inside of trough put two strips of thin iron about one inch wide and as long as the boards are wide, so that the scythe will not cut into the ends of the boards. The stick in which the scythe is put should be incased with a board, so as to steady the motion of the scythe. One peck of feed can be cut in two minutes."

ONLY A SPECK.

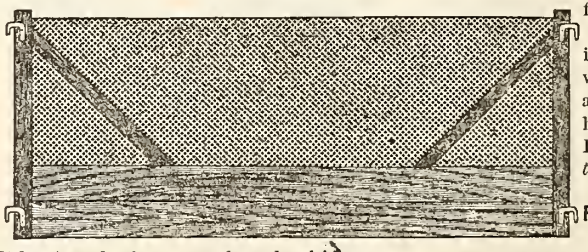
Only a little, tiny speck, yet it is enough to change the price of a bird from $10 to ten cents a pound, according to the "fancy" requirements. Here is what a reader at Petrolia, Pa., asks:

"A friend has a cockerel and two pullets that he bought from an advertiser. The cockerel has a white spot on one of his flight feathers, about as large as a pea, and the pullets have the same. Are they pure and will it appear in their progeny?"

The birds are Brown Leghorns. They are no doubt *pure bred*, and hatched from eggs, perhaps, that came from the parent of prize winners. The white spot is not allowed in a show bird, but it does not indicate impurity. It is not unusual for such a defect to occur, even in the best of flocks, but no advertiser should *send* out birds with white spots unless the buyer informs him that he "is not particular about show birds," as some of them frequently do. Don't forget that the *price* has something to do with the "quality" when buying birds.

PORTABLE PANEL.

Our illustration shows a drawing of a panel of fence, of any length preferred, sent by Mr. A. P. Griem, Oak Summit, N. Y.



It has two hooks on each end, which are simply hooked into rings or staples on the posts. It is so well shown in the illustration that a further description is unnecessary. The panel is composed of two boards at the bottom and wire netting above. Any reader can understand how the panel is constructed at a glance.

CAN HE DO IT?

A young man has a few hundred dollars. He wishes to engage in the poultry business, and he also wishes to make $2,000 a year on a lot 120x130 feet. He says:

"I have an idea that I would like to engage in the poultry business. Now, I am a young man (twenty-five years), also married, but can have access to a few hundred dollars. Would you advise me to go to raising poultry? I live within sixty-three miles of Chicago. Do you think I could raise enough broilers on a piece of land 120 feet by 130 feet to make $2,000 a year? I have a number of incubator catalogues that say I can, but could I? Also, can you tell me where I can get a book that will give me an idea how to build for this business?"

It can be seen at a glance that he knows nothing of poultry, but he has been *reading*. How can he expect to take a few hundred dollars and make $2,000 *a year*, when he knows not the first beginning. By the time that lice, roup, and other difficulties were met, he would be disgusted. He could not even buy enough incubators to hatch the chicks, with a *few* hundred dollars, while the cost of the buildings would be a large item. Our advice is to save up $2,000 and try to make a *few hundred* a year. Begin at the bottom, always.

BROILERS AND EGGS.

Here is an inquiry that we wish to take up for the benefit of our readers. It is from Grafton, Wis. The writer says:

"Will you please advise me, through the columns of the POULTRY KEEPER, what you consider the best breed to cross with a Red Cap male, in order to get good layers and also fair size for broilers."

Now, the Red Cap is a non-sitter, and one of the best breeds for producing eggs. It is not considered of any value for the table, or for producing broilers, compared with other breeds. The writer would not be able to get good broilers from such a breed, no matter how the cross is made. Then, again, it does not pay to use a Red Cap outside of the objects for which it is intended. The result of a cross with the Red Cap, on any breed, would be good layers, but for broilers, something else—for instance, Brahma, Cochin, Plymouth Rock, or Wyandotte—should be preferred.

HOW TO ASK QUESTIONS.

A subscriber at Westfield, Mass., is well pleased with this paper, and he desires to have us assist him. It is an easy matter to ask a question, but a small piece of the interrogatory, instead of the whole, becomes a puzzle. Without any intention of disrespect (we withhold name), we give the question below:

"I can hatch chicks all right, but when about a week old they become lame, weaken and die. Will you give cause and remedy."

Now, the above is a fair question, just such a question as others would ask. We understand it thoroughly, for it means that he can hatch chicks, but they become lame when a week old, and finally die.

But he does not say how he *manages*. He leaves us to guess how the chicks die. He gives us not a single point to work on except that they become lame and die, and that may happen from a dozen different causes.

We do not know what kind of a brooder he has. If it is a *bottom* heat brooder then that is the cause. We *guess* that he has a *bottom* heat brooder.

No bottom heat brooder will answer for chicks. It may serve well for a short time, but all chicks in bottom heat brooders finally become lame.

When readers write us in regard to loss of chicks we much prefer to know about the brooder, or the hen, than about the feed. Everything is in the *mother* that broods them.

FEEDING TOO OFTEN.

Feeding hens when they do not need food is very prevalent. It is well enough to feed them in the morning, when they are just off the roost, for they are hungry, but no other meal should be given at this season until as late in the day as possible. The reason for this advice is that in summer the fowls require less food, and should be kept in exercise. The blood of a bird is warmer than that of animals, and as soon as they are overfed they take on fat very readily, the result being that they often die from vertigo, and also become subject to liver disease, especially fatty degeneration. The feeding should be so as to keep the hens at work in the business of scratching, and if a few grains of wheat or corn are buried in the ground or in litter, they will industriously work for them; but the main object in summer should be to feed less concentrated food and make potatoes, grass, or other bulky material serve the purpose, as the hens must not be fed, for as yet the egg material must be provided.

MR. KELLAR'S GOLDEN WYANDOTTES.

The illustration in this issue is of a pair of Golden Wyandottes, sent us by Mr. Ira C. Kellar, Prospect, Ohio. Mr. Kellar says that it represents a pair of winners bred by him, the male having scored ninety-five and the female ninety-six and one-half. He has won prizes on his Wyandottes at nearly all of the leading shows, including Mt. Gilead, Columbus, Marion, Washington C. H., Ypsilanti, Charleston, S. B., and the New York Shows. He also breeds Silver Sebright Bantams, on which he has won at the leading shows. The Golden Wyandottes resemble the Silver variety in all but color, and they are becoming favorites with all who have tried them, as they are good layers, have plump bodies and are excellent mothers.

WANTS TO KNOW HOW.

A correspondent at St. Louis, Mo., gives his opinion rather plainly in regard to what *should* be, and his letter calls up one or two matters that may be explained. The correspondent is disposed to make a few "kicks," and writes:

"Will you tell me at what temperature to keep the egg chamber while hatching, for the first chick hatched knocks the thermometer off the eggs, and kicks it over afterwards. I think of setting the thermometer in a small frame, at about one and a half inches from the bottom of the egg tray, after the eggs begin to pip.

"The comments of your correspondent on 'nature,' in the February issue were to the point. Some writers say a thing is correct because they think so, and mislead others, without having proved it themselves. We are told to give poultry, water in winter, so that they do not wet their wattles. I have never seen a Leghorn rooster drink without wetting his wattles, but perhaps these people furnish their fowls with a tumbler and a long straw.

"They also say to give ducklings water so that they don't wet their feet. If these people would be kind enough to tell us how to do these things something would be gained. Will anyone tell us how to pick a fowl without tearing the skin. I tried to do that with a young Brahma rooster, but it was not a success. Is it considered best to pull the feathers towards the head or towards the other end? Some people speak highly of Spongia for roup. I have used nearly a bottle of pellets (15), and only one got well, and that was a mild case, and a neighbor used a bottle on Games, and says it is no good. I have had some rather bad cases this winter, and Mr. McFetridge's remedy, recommended in his book (soaked corn), cured them. Two or three would not eat it, but I opened their mouths, pulled their heads up, put four or five kernels down their throats at a time till they had about thirty of them, and they got well."

We are much obliged to the writer for his *lectures*, and we trust that he will not consider it na offense if we, too, be somewhat blunt in our replies to him.

First, the egg chamber should be kept at 103 degrees. If the first chick knocks the thermometer over it is one of those misfortunes that cannot be prevented. The thermometer, however, does not *make the temperature*. It simply records it. Unless some sudden change in the weather occurs, and the chicks are left in the incubator, no change will occur. His plan for placing the thermometer on a frame, however, is a good one.

Our correspondent thinks that the writer who advised not to allow Leghorn roosters to get their wattles wet should try it. We can say that it *has* been tried. Poultry supply dealers have drinking fountains that permit birds to get their beaks only to the water. It has been known for years. The same is done with ducklings, to a certain extent. They are not allowed to get their *bodies* wet. They will waste enough water to dampen their surroundings some.

We may add that there are hundreds of persons who pull out the feathers from chicks and who do not tear the skins. They know *how*. The feathers are simply pulled, in the direction they point, but it is done very carefully.

We can say also that while he may not have had good results with Spongia, *others have*. We should consider a fowl *very* valuable if we had to *handle* it, and cram soaked corn down its throat. It is too much like *work*.

Now, our correspondent means well, only he does not see some things as plainly as do others, and he condemns them. We thank him for his letter, because both he and others learn by the criticisms. We value all letters sent us, for although some of them may contain much that is not suitable for some readers, yet they may be highly valued by those not so well informed.

WHY THE CHICKS DIE.

The letter of Mr. Martindell, in a former issue, has called out many of our readers, and among the letters written was one by Messrs. Davis & Celly, of Clarksville, Mo., written to Mr. Martindell, and excellent suggestions are given in regard to feeding, and also to the exposure of the chicks when turned out of the brooder early in the morning. We consider the letter one of the most valuable that we have received on the subject, and give it as follows:

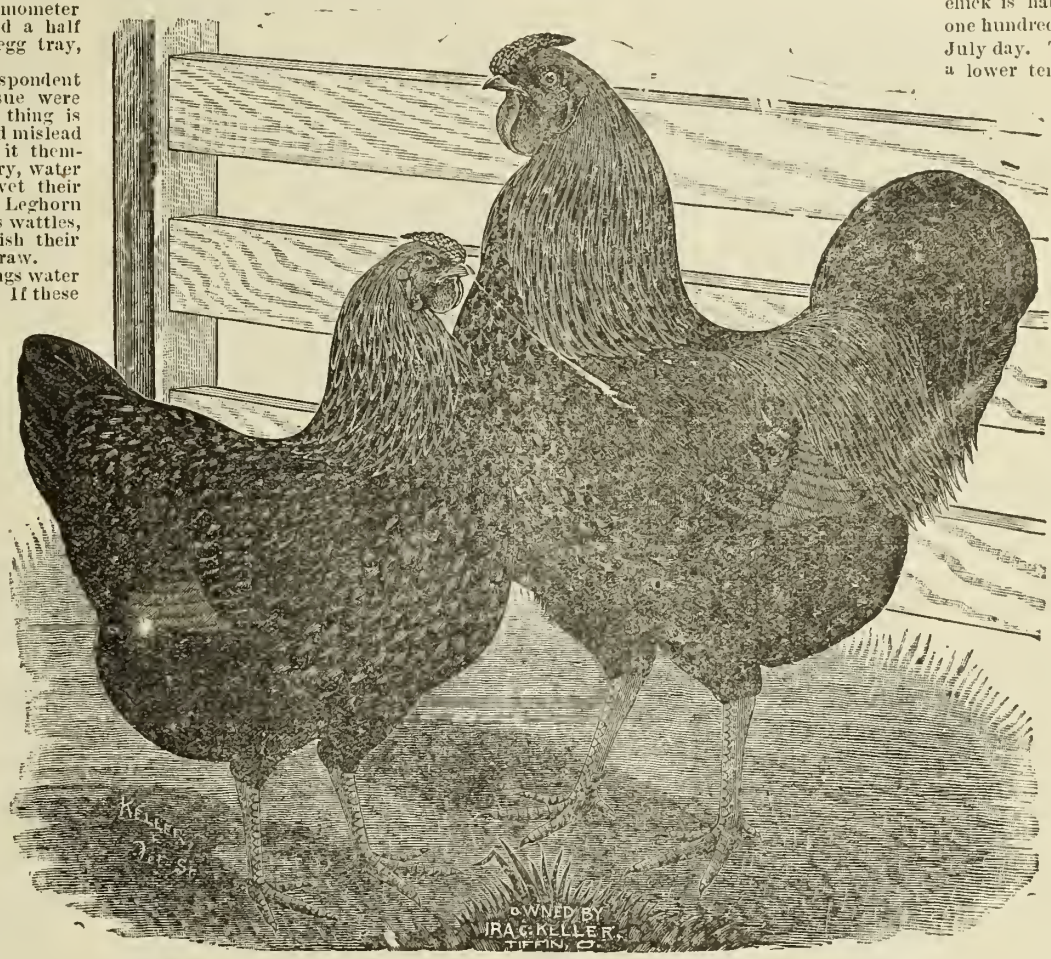
"I noticed in the last issue of the POULTRY KEEPER, your letter in regard to raising chickens, headed "Why the Chicks Die." As we have had some of the same experience, we think it may be beneficial to each of us to correspond a little. As the old saying goes, "birds of a feather will flock together." I suppose they thrive better or they would not flock together. It seems we are of the same feather when it comes to raising chicks. Although the editor's answer to your letter is very instructive, we do not think it is just exactly what we want, as you, like ourselves, may have several breeds, or mixed breeds, which would be altogether different from those he speaks of. We think his instructions on feeding are excellent, but as we have been experimenting with our young chicks, during our limited (two years) experience, find, as we think, that the trouble with young chicks is different from what the Editor thinks. We found, on opening the chicks affected by the disease you speak of (which had very near the same symptom as ours), after dying, that their livers seemed to be very unhealthy, some being yellow and of various other colors, which we thought proved to be liver disease. Then, in order to correct that, we gave them homœopathic doses of *m rcurious*. We purchased a ten-cent bottle of the tincture, of our druggist, gave them about ten or fifteen drops in a pint tin cup of lukewarm water, once a day, for two or three days, and have lost very few since. But we also concluded that we may be feeding too much, so we cut their rations down considerably.

Now, as to feeding, we certainly have not got it down perfect, but will say this much. As the little chicks begin to grow, they grow very fast from the time they are hatched, and as they get a great deal of nourishment from the yolk of the egg, which is still in them, the first few days, they need very little rich food, so we feed sparingly of any food, never allowing them to get and keep their crops stuffed full. For instance, you take an old hen that hatches her chicks out in the field. It is very evident tha they rarely ever get their crops so full and keep them that way all day, but they get a little at a time, though very often. We found, also, that those chicks that die first are very fat when not more than a week old. Then, as they grow older, the dead ones are poorer and poorer, until they are nothing but skin and bones, and they still eat heartily, but nearly all die. Now we just concluded it very evident that they were fed too much in the beginning, causing their livers to become deranged, which, if not checked, will finally kill most of them. Another thing which we think may injure them, is letting them out of a warm brooder in the morning into the cold air while they are very young. We try and have the room warm, say about sixty or seventy degrees, before turning them out in the morning to feed them. We also think it necessary to give them all the room for raising that is possible. We also think it an advantage to sprinkle a little air-slacked lime (say a spoonful or so) on the floor and in the brooder, being careful not to sprinkle enough to make a dust. We have also used some of Pratt's poultry food, but cannot say for certain that it has done any good. Now, it may be, you have tried all that we have, but probably not, so write us and give the temperature of your brooder and a few of your plans for feeding, etc., which may help us. After reading this, if you like, you may mail it to the editor of the POULTRY KEEPER.

According to their experience, and according to claims made by us in previous issues, young chicks are too highly fed at the start. If no food at all was given a chick for forty-eight hours after it is hatched, it would be an advantage, but it is difficult to make persons so believe, hence we have been satisfied to suggest only thirty-six hours. Then, again, it is better to "feed a little and often" than too much at a time.

The chicks that run with hens in the spring have exercise, and they do not eat too much at once. It is better to feed millet seed, scattered in litter, and compel them to scratch and gradually secure their food, than to fill them at once. This is also suggested by another correspondent in this issue. It is lack of exercise that causes leg weakness and other difficulties.

Turning out the chicks from a warm brooder to a cold room, in winter, is like taking a lot of babies out of their warm cribs and exposing them in a cold room. If each reader would keep in view the fact that young chicks are nearly naked (the down being no protection), and that they should be treated like *babies*, there would be more success with them.



GOLDEN WYANDOTTES—FROM IRA C. KELLER, PROSPECTUS, OHIO.

WHAT TO DO WHEN PRICES ARE LOW.

The one who raises a fowl can just as well afford to indulge in the luxury of "chicken" as can he who is compelled to go into the market and buy. If poultry and eggs are low in price, the family can provide a better home market than can be secured elsewhere, and at the same time avoid all the difficulties usual to dressing, shipping, or waiting for "returns" from the commission men. The value of eggs as food is placed above beef, while they can also be used as factors in a great many dishes (some of them luxuries) that are found upon all well-regulated tables. Eggs at fifteen cents per dozen, estimating as many as ten eggs per pound, is only twelve and one-half cents per pound, while choice beef may command as high as eighteen cents per pound. Unless for a change, we see no reason why a farmer should go to the trouble of selling eggs at low prices and buying beef at a higher price per pound, while roast chicken is considered even superior, yet farmers will sell poultry at a sacrifice at times instead of using such at home.

WHY YOUR CHICKS DIE.

The early market chicks are necessarily hatched early, and but for the great loss among the broods in winter, nothing is so profitable as broilers. The cause of loss though due to mismanagement, is not intentionally so, for difficulties arise which cannot be foreseen; but to consider what a young chick is, and especially during the cold season, will lead to an observation of where the mistakes are made. When the chick is hatched, the temperature is over one hundred degrees, equal to a very warm July day. To suddenly compel it to endure a lower temperature is to weaken it, especially as the down is no protection whatever, the chick being really naked. On most farms there is a lack of that care so necessary to bring the chick through the critical periods, and the most essential object in view should be warmth not only when the chick is very young, but until it is well feathered.

Chicks are exposed when the owner is a witness of the fact, yet he may not notice the causes. A dish full of water, from which the chicks not only drink, but get their feet and portions of their bodies wet, kills as many young chicks as any other method of lessening them, as the water chills them to an extent from which they seldom recover. It is not even advisable to allow ice-cold water to drink. Exposing the hen in a dry place, but where the wind blows under and around her, kills many chicks, especially if they are two or three weeks old, at which time they cannot all be well covered if the brood is large, and if they are growing feathers rapidly, many of them will be somewhat debilitated.

Feeding should be done four or five times a day, the feed being warm and the refuse removed. On a cold day, if a meal be neglected, it will be severely felt by those of the brood that are rapidly feathering, but such chicks as the Brahmas do not feather too rapidly, and, strange to say, the chicks that remain nearly naked are the easiest to raise, if kept warm, owing to their not being compelled to produce feathers rapidly, but a Game, Leghorn or Hamburg chick will be apparently healthy and then suddenly fall or droop, simply because its food is directed to the production of feathers instead of to the support of the body. Feed them on any kind of food they will eat, but do not omit ground bone and chopped meat. Keep litter for them to scratch in, millet seed sown in the litter being an excellent inducement to them, and the exercise promotes the appetite, strengthens the limbs and assists in keeping them warm.

KEEP IT UP.

You cannot become entirely free from the pest of lice in your poultry-house. You can get rid of the pests, but the work of keeping them out must go on. When you cease operations they return. It is not necessary to go to extremes except to get them out, but care must be taken when once lice are driven out that the quarters will not be very inviting for their return. Once a week saturate the roosts with kerosene, on both under and upper side, and sprinkle the premises with soap emulsion and kerosene. If the droppings are removed, and the nests kept clean after so doing, there will be but little danger from them.

CROP BOUND AND A NEW CROP.

CAPT. PHILLIPS, CHICAGO, ILL.

In regard to Hooper's Egg Powder, I would caution any one to use it very carefully, if *at all*. In *my* opinion there is no egg powder equal to fresh *bone* and *meat* freshly ground. It is safe and sure. If one thinks it ought to be made hot by seasoning, mix one quarter of red and three quarters black pepper, and sprinkle the bones before cutting. Nothing in this world is its equal as an egg producer. Seeing Hoopers formula, I had some mixed (but it cost me double what he claims it cost him). I fed it as he directed, and the result was that it nearly destroyed my flock and put a quietus on their laying for two weeks. It physiced them very badly, so much that many of them were so weak that they could not stand up. It took days of care to get them strong and in condition to go back to the old food and treatment. I want no more of it. If anyone does they will find about ten pounds in my ash pile.

Speaking of the above powder reminds me of a White Langshan hen which has been almost a perpetual layer for two years. She was badly afflicted by the use of the egg powder. When she got into shape to eat again, she became crop bound. I gave her a dose of sweet oil, with a little bit of coal oil mixed in, and worked her crop for about twenty minutes and she seemed better. I was called away on business and did not notice her again for about ten days. She seemed to be quite lively though not laying. I picked her up, and to my surprise, found her crop *full* of oats and wheat. The crop skin was hot and the contents sour and fermenting. The feathers had fallen off, and the outside skin was black. On examination, I discovered that the whole crop had become inflamed about the edges, and seemed ready to fall out. I at once cut open the crop, washed it out with warm or hot water and carbolic acid, then sewed it up, and filled it with an ounce of sweet oil and carbolic acid. I expected she would die within a week but as she did not, and I saw that the crop had dried up, and was gradually falling off, I thought I would let her alone, and to-day, on examination, I find a *new crop* has been forming, and she is all right and again laying and in excellent condition in all ways. Did you ever hear of such a case?

I had a valuable White Wyandotte cockerel taken with weak legs. He could not stand up. He had lost control of his legs and feet. I rubbed and tried all kinds of remedies, without doing any good. Having a preparation of salicylic acid given to me for my own use, I dosed the cockerel with it, and in three days he was able to walk and is now perfectly well.

MILLET WILL RAISE THE CHICK.

MRS. EPPIE WINTER, GRAVES, KAN.

In your February issue, I notice a letter from Mr. H. L. Martindell of Pennsylvania, and I will add that I have had the very same experience, and have placed the fault to the care and food my chickens had, and now I will tell you what kind of care will raise chickens, be the number large or small, either from the incubator or the nest. Prepare a food like this: take equal parts of scalded bread and oatmeal with as little water as possible, to which add coarse corn meal, about enough to make the mixture dry enough to crumble with the fingers. Now, after the chick is twenty-four hours old, feed this food to it every two or three hours until it is about three days old, and then give it millet seed, and as soon as he learns to eat the millet leave off the other food and give him good fresh water in such a manner that he can't climb into it. See that the chickens are warm enough to keep them from pushing up into corners and trampling each other down, and, above all, give them plenty of good fresh air and sunshine. I have raised all the way from one hundred to seven and eight hundred chickens, on nothing but millet seed after the second day. They will soon learn to eat it by tapping on the board on which the millet is sprinkled, and if you like to see anything eat, you will enjoy seeing a large bunch of small chickens eating millet.

But now perhaps you will say this is some "woman's" experience, and so it is, but I assure you I could not get along at all without my husband's assistance, and he has often wondered why the poultry papers said nothing about millet I will wait for the result of this writing before I write any more.

WHITE LEGHORN IN A COLD CLIMATE.

T. MCDONOUGH, NASHVILLE, ONT., CANADA.

I have never given you my experience with fowls before, but I thought I would try it for once. Last year I put in an old barn, whose cracks give all possible draughts, seven White Leghorns and one rooster, for breeding purposes. I got twenty eggs from P. A. Webster, hatched sixteen chickens, of which seven were pullets, and mated them with the best Leghorn rooster in these parts. Well, the pullets did not lay till the 28th of February, when one started. They were mated on March 1st. One after another they all started; during March they layed 130 eggs, and in April, 134. At the end of that time they were let loose. They had lots of straw on the floor to scratch in and a warm mash in the morning; were never let out except on odd evenings, and had milk and warm water for a drink. We received 282 dozen eggs during two months last year from 100 hens.

ONE OF THE "WIMMEN" REPLIES.

MRS. N. K. G., CULLEN, N. Y.

As my time has been so filled with the "domestic duties" of my household of late I have been deprived of the privilege of giving much attention to my feathered flocks, and thus have been obliged to leave them to the mercy of the sterner sex (I can't tell how they missed the "wimmen's" care), so, when my subscription to POULTRY KEEPER expired, I decided it would be useless to take it this year, and with many regrets I wrote you a postal to that effect and gave it to my better half to post. One evening, while looking over the February issue, it was so interesting, and contained so many articles which were right to the point, that it was quite hard fighting my poultry ambition, although one of the "wimmen." The thought would crowd into my mind,—"I almost wish I had not sent that card to the POULTRY KEEPER." Then I came to the article "Wimmen and Chickens," but passed it by with the thought "I won't bother to read that; some crank is only making fun of poultry women."

So I read on,—"Deception and Honor." "What's this! I will read it. Now that is just to the point." How many, many birds are bought just for that purpose, to enter a poultry show, and who gets the credit? The purchaser, of course, and perhaps at the same time he does not know enough about fowls to tell whether they should be fed on grain or politics, but would probably say the latter.

Perhaps those very birds were reared by one of the "wimmen" poultry raisers. Did you ask why we do not exhibit them ourselves? Sure enough! Would it do any good? I fear not, and why? We are not in the "ring." We cannot be bribed for a vote. And another thing, "wimmen" don't know anything about fowls any way, only to feed the chickens. Again the thought,—"I wish I had renewed my sub."

I wonder what that was about "wimmen" and chickens; I guess I'll read it. Well, well, I am surprised! I, "Brer. Jacobs," believed in "wimmen" poultry raisers. Where is Miss Williams; has she left us? There it is again; about the women writers giving good advice which they do not expect any one to practice. I wonder if he *always* thought so. (I believe I'll ask Mrs. J.) Now, if our poultry yards are full of snow, three feet deep, I beg of you ladies, do not try to shovel *that* away; let the *man* do it. If you haven't any man, hire a boy. Your fowls will pay for it easy enough if they are kept profitably. My advice is, do not keep so *many* fowls, ladies, that you are obliged to neglect those domestic duties. No, no.

But we can keep enough and *not* neglect our domestic duties, to keep the purchaser supplied with "show birds." That thought again,—"I believe I *will* subscribe for it *now*."

A few days ago the better-half came to me handed me a postal, and said, "Here, I guess this is yours. I forgot to post it." Ha! ha! Mr. Editor, please find fifty cents enclosed, for which please renew my sub. to POULTRY KEEPER another year. Success to the paper, its readers, and all its good *practical* writers, "wimmen" or men. Its pages are full of instruction.

PRESERVING EGGS.

(NAME WITHHELD.)

The average farmer and poultry raiser generally does not realize what they lose by selling eggs in the summer. In the months of May, June, July and August eggs usually sell for about one-third of what they do in the winter, and it is through the summer months that biddy does her best work. We will illustrate as follows: A farmer has a flock of forty hens that will lay 365 dozen eggs a year. They will lay 210 dozen in the summer, which, if the farmer sells, he will get eleven cents a dozen, or $23.10 for the 210 dozen. Now, if he had kept the eggs for the higher prices in winter, say till eggs reach twenty-five cents a dozen, he would have received $52.50 for his eggs, making a clear profit of $29.40, which is big pay for the few minutes spent each day in preserving them, and the above estimate is low, both in number of fowls and prices. But the great trouble is that some do not want to bother with the eggs that way, while others are afraid that they might fail in keeping them, causing a loss of the summer's egg crop. I have an infallable, as well as simple method, for preserving eggs, and will be pleased to send the recipe to anyone who requests it. No trouble is experienced in keeping eggs perfectly nice, bright and fresh, for one year. The opinion is held by many that poultry raising does not pay. The reason why it does not pay is because many details are neglected; little things are ignored, and not the proper economy is used in everything. If the poultry business was conducted as systematically and judiciously as all other successful businesses are conducted, there is no question but what it would pay, as the profits are certainly large enough.

[It would have been just as easy for the writer to have given the process as to ask persons to send for it. For that reason we believe the writer is using the article as an advertisement, and we withhold the address as we wrote the writer in regard to it, and received no reply. All such letters usually go into the waste basket, but we give this as a sample. Our September, 1887, is full of egg-preserving methods.—ED.]

HOW HE GOT GOOD HATCHES.

WM. BIERRELL, BETHEL, CONN.

Seeing in your valuable paper others giving their experience, I thought perhaps mine might prove useful to some, as others have to me. I made two incubators from the plans you sent me, one to hold 140 eggs and one to hold eighty-five eggs. On the 2d of February I started both with 182 eggs tested out eighty eggs, putting the remaining 142 in the 140 egg incubator and hatched eighty-eight chicks. I did not have any moisture. I would like to make a few suggestions that I think would improve the POULTRY KEEPER Incubator. They may be old, but they are new to me. 1st. Have two tubes in the top of the tank, one to put the hot water in, and a small one to let the air out, for with the one pipe only when you put water in, the air in the tank will sometimes throw the water back on your hands or face. 2d. Make your drawer one-half inch deeper, and rabbet out the upper inside edge half inch by half inch, then make two light frames the width of the drawer, between rabbet and half the length of the drawer. When the eggs begin to pip heat your frames and put them on the drawer. I lost four chicks when I pulled out the drawer. They put up their heads and got caught between the inner edge of the incubator and the back of the drawer, and were beheaded. 3d. Take a piece of thin wood, the length between rabbet of drawer, half inch wide on the ends, and two inches wide in the middle. Get one of these thermometers with the plate cut at the angle of forty-five degrees at the bottom, fasten the top edge of it to the top edge of the board and to the bottom, with the bulb on a level with the eggs, so that when you pull out the drawer the thermometer is always in its place. 4th. Have a piece of galvanized iron, eight inches wide and twenty inches long, turned up three inches on each end, and fasten it to the tanks on the inside of the top, under the pipe that you put the water in. It makes the temperature much steadier. One of my incubators has it, and it works much better than the other. There are a few other things that I would like to add, but perhaps this is too long already. I am very well pleased with the POULTRY KEEPER. I take four papers, but get more practical information from yours than from all the others combined.

PREVENTION OF EGG-EATING.

W. W. KULP, POTTSTOWN, PA.

I have just had a case of egg eating, and as it is a common complaint, I thought a few suggestions on its cure and prevention would be helpful to some. The common practice is to kill a hen caught in the act. Don't do it. It will likely be your best layer, and a little managing will stop or prevent it.

They learn to know how sweet to their taste eggs are by eating those broken while laying. Also, if they have a lack of grit they will search the nest for bits of shells, and break some eggs, and if a shell is open it is at once eaten. I set a hen in a pen containing twelve hens. They had two nests side by side. They layed about six eggs each day. An egg was broken under the sitter and was eaten by the hens. Every time after that, about four hens would fly up and examine the nest every time the hen was removed to feed, while the other nest contained the fresh eggs and they would not try them. I removed the sitter as I should have done before setting. For eight years I have kept 100 hens in an enclosure containing three houses. At different times they would commence to eat the eggs in one small house, and eat every egg layed. I covered every nest in that house and there were none disturbed in the other houses. If you find a nest is soiled two days in succession cover it. They have learned to come there for eggs, and if the cover is continued a while they will learn to look elsewhere. Where fowls are in yards the eggs will be saved by gathering them at noon. Follow this formula, and you will never have to kill hens to save eggs. Feed a balanced ration. Be sure they have grit. Cover a nest which is soiled twice in succession, and gather the eggs at noon.

GOOD HATCHING.

H. L. WOLCOTT, WASHINGTON, D. C.

I have never tried poultry keeping as a business, but I have tried it several times as a pastime, and for experience. I have tried the incubator twice, once with a home-made one, on the hot water plan but without success. I had no regulator for temperature, and I suppose that was the trouble. I afterward bought a 100 egg size Prairie State incubator. I had very good success with it. My first attempt was with thirty eggs, of which nineteen hatched. I thought that very good for a new beginner and I tried it over at once, with a full machine. After four days I tested out twenty-five eggs and of the other seventy-five, I got seventy-two chicks. I never had as good luck again, never getting more than fifty-five out of the 100 eggs, but I believe the fault was with the management of the incubator, for as soon as it became known that I had an incubator in successful operation, I had visitors from all over the town, and some from the country, and I think that the fact of my showing the machine so much, will account for the poor luck I afterward had.

WINTER LAYING.

C. J. REICHE, CHESTERTOWN, MD.

As I wrote you some time ago that I would give you my experience with feeding chickens, first I will tell you what they are. Plymouth Rocks, and I have ten in all, the most of them being hatched the 27th of last June. In December I received forty-two eggs; in January, sixty-eight eggs, and in February, 177 eggs. Now, I think the increase was due to the way I fed them. In December I could not expect much, for they were only seven months old on the 27th. In January I fed wheat and oats in the morning, and at dinner time I gave them, wheat, and at night, corn, also bone, meat, plenty of milk and hay, turnips and cabbage, and in January I fed warm mash every morning, composed of bran, oats, wheat; some mornings with meat in it, and other mornings with onions in it. Once a week I put in a little air-slacked lime, and also gave them milk, turnips, cabbage, and fed wheat only at dinner and corn at night. They are looking fine, and have paid me well. If you think this would be of any interest to your readers you may publish it, but tell them that all I know came through your paper.

ODDS AND ENDS.

P. G. ESTEE, AMIRET, MINN.

I am beginning to get tired of those men who, to get their names in the poultry journals, write about some impossible monstrosity. It is not worth while to read their articles. What does the account of a hen that lays two or three eggs a day teach the beginner? Why don't it become a law that every breeder who advertises eggs for hatching, must have a business card with the seal of a notary public, to the effect that the breeder has good stock of the breeds he advertises. It would be a blessing if the frauds could be kept out of poultrydom. The boys should begin to save their spending money and get a sitting of pure bred eggs. If they have the pluck of a genuine American boy, they will be successful. "Cheap Eggs" is being discussed in *Farm Poultry*. There are lots of people who buy cheap eggs and get cheated, but are glad to keep still about getting dollar eggs. If poultrydom had a few more men like Editor Jacobs, there would not be so much fraud and so many inexperienced persons "roped in."

TOO FAT.

E. C. THOMPSON, ELK CREEK, NEB.

Are such cases as this common in your experience? A neighbor of mine had a bright looking Buff Cochin hen that went on a nest apparently to lay. On going to gather the eggs, an hour later, she was found to be dead. The owner cut her open, and found the liver enlarged until it filled the entire internal cavity. It appeared to be full five inches in length. I saw it some days afterward, and took out the liver and weighed it. It weighed over eight ounces. The owner said some had been torn off. In color, it was rather light for liver, and was almost as tender as clotted blood. The crop was half full of partly digested corn. The internal organs were crowded into very limited space. The ovaries appeared all right, but there were no eggs in any stage of development. The hen had showed no sign of disease. To all appearance she was as bright as a laying hen.

[The cause was probably overfeeding and lack of exercise.—ED]

FROM NORTH CAROLINA.

T. C. PEALE, RICH SQUARE, N. C.

We read with much interest the articles in THE POULTRY KEEPER from poultrymen of various sections of the country, and thought others might like to hear from a poultry farm in "The Old North State." Well, we have had our ups and downs. In 1891 our business paid handsomely; this induced us to enlarge our facilities, and in January and February, 1892, we had a fine lot of chicks hatched out, but, to our dismay, roup in its worst form, canker mouth, with very sore eyes, broke out, and destroyed all of those intended for early broilers before it abated. We tried spongia roup mixtures, thorough cleanliness, isolation, and everything else that we could hope to be beneficial, but everything failed, till we killed all the afflicted ones, and put new hatches in entirely new quarters. However, in our new quarters we succeeded in raising some *very fine chickens*.

A GOOD CROSS.

D. G. MOTER, MOLERS, W. VA.

This is the way I manage the hen business. I have a cross between the Langshan and Minorca, and I feel proud of them. They have all the good qualities. If there is such a thing as a perfect chicken I have it. I have 128 hens, and they shell out the eggs. Last year, in six weeks, I sold ninety dollars worth of eggs, at one dollar per sitting of fifteen. I have been in the chicken business, in connection with my farm, ever since the war, but never found a hen without some faults until I made this cross. I have watched them closely, and I have got the first objection to them

Brief Remarks from Readers

In "This Experience Meeting" the Editor Listens and Learns.

Excellent Laying.—My egg product from sixteen hens for the month of January was 186, and 215 for the month of February. Is not that a good showing?—*T. J. Crowin, New York city.*

Early Laying Pullets.—I think a great deal of my POULTRY KEEPER; I find so many good things in it. My Plymouth Rock pullets began to lay when five months old, and have layed all winter.—*Mrs. John B. Thompson, Waverly, N. Y.*

Lay Every Day.—I have just received the January and February POULTRY KEEPER, and think they are fully worth the money. I am keeping White Leghorns, and they lay every day. This spring I am going to build a new coop for about forty chickens, and see how I can make them pay.—*M. Cornwell, Buffalo, N. Y.*

Made a Mistake.—I have a home-made hot-water incubator, and it is a "number one" hatcher. I can hatch them very easily, but have trouble in raising them. I made a mistake in putting hen-hatched chicks in the brooder with the machine-hatched chicks, but found out my mistake in time. —*Neno Wood, Kensington, Conn.*

Prefers the Old Style.—Thinking that you would like to please your subscribers, I suggest that you ask each one to say which style of paper they like the best; that is, whether they prefer the old or new issues. As for me, I prefer the old, for it can be better handled without being defaced or torn.—*W. W. Conner, Washington, D. C.*

Adopts the Old Method.—I am getting your paper regularly, and like it very much. I think it will help me out a great deal this summer, as I am going to try to raise a lot of chickens. I take the old hen method to hatch the eggs. I have forty-five chicks, hatched from the 23rd of January to the present time. I have ten more hens setting. *Robert Anderson, Denver, Col.*

Western Prices.—If we could get as big prices for poultry out West as you do in the East, we poor farmers would make money, but we can only get $1.50 to $2.25 for the best chickens, per dozen, and there is very little money in it. If you ask one dollar for a choice rooster or cockerel for breeding, they think you are trying to beat them out of a dollar.—*C. Schaer, Superior, Neb.*

Braden and Piety.—I take three poultry papers: the POULTRY KEEPER, *Ohio Poultry Journal*, and the *Western Poultry Breeder*, a trio that cannot be beaten. For promptly being on time the little W. P. B. takes the blue ribbon. As a genuine reformer, the P. K. leads the procession. So far as piety is concerned, Bro. Braden, with the O. P. J., is the headlight of the whole train.—*J. K. Klinefelter, Hiawatha, Kan.*

The Wife and the Hens.—My blood has often been worked up, and my admiration taxed, by the admirable way you encourage the poultry yard business. My wife is a laborer in the poultry business, and joins most heartily in the chorus of our White and Brown Leghorns and Houdans. Mrs. A. J.'s vernacular appears to be very well understood by the hens and roosters.—*A. J. Murphy, Bishop, No State.*

Heavy Eggs.—I have just weighed six eggs, laid by a rose comb Black Minorca hen in one week. They weighed a fraction over one pound. The writer is an amateur breeder of poultry for pleasure only. Would be glad to know through the columns of your valuable journal if there have been any larger or heavier eggs produced by a hen.—*Theo. Campbell, Lexington, Ky.* [We doubt if such weight can be excelled.—ED.]

A Friend in Need.—I had a severe time this winter. All of my poultry were taken down with the roup, and I was very anxious to save them, so worked nearly night and day. Thanks to the POULTRY KEEPER, which, I assure you, I was glad to have to refer to. It seemed like a friend in need at that time. I have been successful in getting the chickens well, and they are now laying. I only lost four out of one hundred and twenty, so I think I did well. —*Mrs. E. A. Gilbert, Seneca, Mo.*

A Good Incubator Test.—I have been a subscriber to the POULTRY KEEPER for two years, and each issue gets better than the last. I have a Poultry Keeper Incubator of 104 egg capacity. I set it this spring in my stable. A bucket of water froze alongside of the incubator, one night, and yet the heat in the machine kept up at an average of 102 degrees. Last year I had seventy-seven chicks from ninety-three fertile eggs. The average amount of water used was about two-thirds of a bucket every twelve hours.—*James E. Fitzgerald, Oakland, Kan.*

Out of Business.—I am not in the poultry business for money. I gave that up. My incubator stands idle, and has been for a year now. I hatched the chicks all right, but could not raise them. I hatched from ninety to ninety-seven out of one hundred eggs, but they died before they were six weeks old. I now only keep about thirty hens, mostly for eggs. I used the Prairie State Incubator. I look and watch for POULTRY KEEPER just the same as if I was in the business for money.—*C. H. Brown, Los Angeles, Cal.*

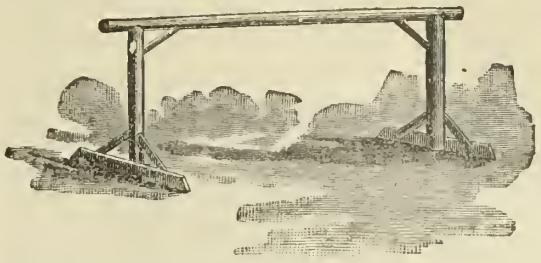
Good Laying Brahmas.—How is this for good laying for the month of February? I had five Light Brahma pullets in a room 5x12 feet, and they were not let out once during the month. They layed, first week, twenty-two eggs; second week, twenty-five; third week, twenty-eight; and the last week twenty-eight; making a total of 103 eggs in twenty-eight days. I received $2.57 for the eggs. "Does poultry pay?" If not, why not? In the morning, I feed a warm mash, such as table scraps, corn and oats ground, bran, and a little linseed oil meal. The latter is a fine thing for giving the feathers a gloss. At noon I feed wheat, and corn at night. They have sand all the while, also coal ashes. Once a day meat and bone, and fresh water twice a day. I clean out the coop once a week. I am in the poultry business to stay, as it pays.—*R. E. Miller, New Haven, Mich.*

POULTRY FARMING.

It is a difficult task to give advice upon business matters, particularly so when one knows nothing about the person seeking it. We have no doubt but that a woman can make a good living for herself in the poultry business, and even support an aged parent who can do but little, but there are many "ifs" in the way, and your letter gives little informantion in regard to the most important points. We will try to tell the needs for such an experiment and allow you to judge for yourself. To be sure of a comfortable living without other income, you would need to keep at least 200 fowls; which would require about two acres of land for the fowl and the 600 or more chickens that should be raised each year to keep the flock good, and it would be even better if there were four acres. Probably the cheapest way of providing shelter for these would be to allow at least one-eighth of an acre to each flock of twenty hens and a cock, which would leave some spare lots upon which could be placed the hospital for sick fowl, the house or houses for sitting hens and for the chickens. If the grounds were larger, we should make the space devoted to chickens larger, rather than the hen yards. The houses for such a flock of twenty or twenty-five fowls should not be much less than twelve by fifteen feet upon the ground, and might be made seven feet high in front and four feet in the back, with a shed roof, which would be the cheaper way. They should face the south or southeast, and have two small or half-windows upon the side. Such houses made so as to be warm and dry in winter could scarcely be built short of fifteen dollars each, and might easily be made to cost more, and we should allow for at least twelve of them. Here, then, is a capital of from $180 to $240 required, and good fowl in the spring would cost from seventy-five cents to one dollar each, with plenty of chance to pay more for fancy stock, which adds another $150 to $200 of capital. Grain and other foods must be bought often when there is no income from the poultry, and there should be a reserve capital of from $50 to $100 to work on; then there should be chicken coops and other things, so that it would use scarcely less than $400 of cash or credit capital, and $500 would be better. But that is by no means all the capital required. It needs some knowledge of the business, though a farmer's daughter who has had more or less care of chickens all her life should have enough to start with. But it requires patience, perseverance, pluck and prudence. To get discouraged because the hens do not lay when eggs are at their highest prices, or because disease gets among them, or hawks, skunks, weasels, rats or cats make havoc among the chickens, is to lose the entire investment. One must go into it with the determination to "fight it out upon that line if it takes all summer" and another summer, too. When these troubles arise, if they do, and they probably will, conquer them or perish in the attempt. Then prudence is needed to prevent running off after every new breed, every cure-all and every egg-producer offered. Another thing needed is health and strength. A woman can do most of the work needed in caring for hens and chickens if she is able to work every day, and if she will throw off her corsets, wear short skirts and thick shoes and dress warmly when out among them, as she will need to be to care for that number, from early in the morning, most of the time, until they have gone to roost, she should gain in health and strength rather than lose. If we have written discouragingly it has been more that you should not be led into it without a fair knowledge of the difficulties to be encountered, than to deter you from entering into the business, for we think it might be made a steady and profitable business for many women. We know that others have succeeded in obtaining a good income from a poultry yard which they attended in the leisure moments they could spare from their household cares. Of course, one might begin cheaper by getting a few hens first and hatching chickens enough to stock the house for the next winter, but there would be no income excepting from the sale of the cockerels and the culls among the pullets, for about nine months, and that might be the safest way, but we have answered the question as we understood it.—*American Cultivator.*

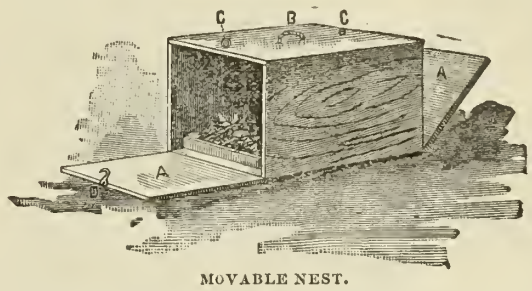
MOVABLE ROOST AND NEST.

As summer comes, lice will swarm on the roost and in the nests. It will be an advantage if the roost and nests can be carried outside and cleaned, which allows better work to be done on the walls. The illustration of a movable roost needs no explanation. It may be of any preferred length or height, but should be strong. The lower the roost-pole the better.



MOVABLE ROOST.

The nest-box may be one foot wide, fifteen inches high and eighteen inches long. The boards, A A, are hinged, the front one remaining down all the time, and the rear one up, except for cleaning the nest, when both ends are open. Hooks and eyelets are shown at C C and D. A handle, B, is intended for carrying the box. By boring holes in the boards, AA, the nest may be used for setting hens, and may be entirely closed. The nest should be raised an inch off the ground. A narrow crosspiece is in front to prevent the hay from being dragged out.



MOVABLE NEST.

CHICKENS vs. WHEAT.

Daniel Campbell, who lives west of Gridley, is the owner of one of the finest poultry farms in this county, and his experience is worth something to many, for he is the owner of 400 acres of rich and fertile land that he devotes to wheat. Wheat growing is not very profitable, so $500 was devoted to chickens, and the gentleman and his wife have studied the poultry question thoroughly. They purchased the best breeds, Brown and White Leghorns and Plymouth Rocks, planted an acre or two to alfalfa and took excellent care of the hens. They select the white eggs from the brown and by so doing obtain two and a half cents a dozen more for the white than for the brown eggs. They have established a deserved reputation for fine, large, fresh eggs in the metropolis, and thus get from three to four cents more a dozen than the ordinary farmer who sends his eggs to market.

In the season when eggs are high, the utmost attention is paid to the poultry so as to reap a big price for the eggs, but when eggs are low they are hatched by means of an incubator and the young chicks are raised by hand. They have been so successful that Mr. Campbell recently said to a friend that he was clearing more money from his poultry than from his 400 acres in wheat.

We hope his example will be followed by many, for there is a big demand for eggs and poultry in this State, and we send away each year thousands of dollars that ought to be retained in California.

The price is not likely to lessen, and we wish Mr. and Mrs. Campbell may continue to reap a rich reward from their flocks and that the lesson they teach may be learned by those who cry hard times, yet fail to get out of the old-time rut.—*Oroville Register, California.*

CROSSING FOWLS FOR EXPERIMENT.

The Rhode Island State Experimental Station has a novel, interesting and instructive exhibition, says the Providence *Bulletin*. It has attracted more attention than any other display in the hall, and the manner in which it is arranged makes it easily comprehended to the observer, providing that Mr. Cushman or his assistant is not around to explain the technical parts. The breeding of egg-producing fowls has been experimented with for so many years by the fanciers and breeders, that the various breeds and strains have been so thoroughly tested that the selection of an egg producing fowl by the farmer now has become a mere matter of choice or prejudice. So many good strains are to be selected that it is almost impossible to go wrong in this matter.

There was little room left for improvement in this direction, so the Experimental Station took another branch to the hen business and commenced experimenting with the desired end in view of obtaining the best birds for the market. This was a branch that had been neglected, the raisers of poultry being contented to raise egg-producing fowls, and, when they had finished their usefulness on this mundane sphere, were contented to kill them off and realize what they could from the carcasses. This division of the work at the station was placed under the direct supervision of Samuel Cushman, and the experiments have been going on now for two years, and this exhibit is the first one showing to the public what has been accomplished. The idea has been to cross the different breeds in order to secure the largest and most healthy birds.

It has been ascertained by these experiments that the first cross of two thoroughbred fowls was the most prolific. They were hardy, larger and grew faster than either of the individual breeds. Some twenty crosses have been made with thoroughbred fowls, and representatives of these crosses are on exhibition, and the mixtures are peculiar. The pullets invariably take after the cock in coloring, and the cockerels follow in line with the hen. Where an Indian Game cock was crossed with a Light Brahma hen the cockerels were all light, somewhat like a light Brahma, while the hens were of a red or buff coloring, and with a physical formation embodied in both breeds. The Indian Games are hardy birds, their flesh is very solid and the breast is large in proportion to the size of the fowl. The Light Brahma is a large, leggy bird. By crossing these breeds a bird of great size is obtained, with flesh that is hard.

To show the kind of carcasses that may be expected to be obtained from the various crosses there are twenty-six dressed birds on exhibition, each one tagged so that the breeding may be easily determined. By this it may be seen what birds will look the best for market. The light-feathered and light-legged birds make the finest market birds for the pin feathers do not show, and this gives the carcass a clean and delicate appearance. Each specimen is marked with the weight taken before and after dressing, so as to show the shrinkage. Of all the crosses, that of the Indian Game and the light Brahma shows the least shrinkage, making this cross a most desirable one for market purposes.

In another line of producing market poultry, the station has taken up the raising of capons. In this line they have been most successful. Several specimens of dressed birds are shown, one weighing ten and three-quarter pounds dressed and being but twenty-one months old. Of these birds in the live specimens some monsters are shown, some of them being but young birds and weighing thirteen pounds. The market men have been greatly interested in this exhibit, and the hen men have made it a study and greatly benefited by the display and by the information imparted by Mr. Cshmanu and his assistant.

ADVANTAGES OF SMALL BREEDS.

The general preference is for large fowls, but the small breeds have advantages which are also desirable. As a rule, nearly all the small breeds are non-sitters and lay well. Being naturally active they do not become fat very readily and are free from many ailments peculiar to the large, heavy breeds. If they are given the privilege of a grass-run or a field, they will pick up a large share of their food and lay nearly every day. Although the small breeds do not possess as large carcasses when dressed for market as larger breeds, yet they excel in breast meat and a smaller proportion of offal, as the greater the activity of a fowl, and especially if it can fly over a high fence, the larger the development of the muscles of the breast, which is really the choice portion of a fowl. Crossed on large, heavy breeds, the union is usually successful, as there is less disposition to roam, and the heavy feathering of the large breed is secured as a winter protection. A larger number of hens of the smaller breeds can also be kept together, which is quite an advantage.

SCALDED AND RAW FOOD.

It sometimes happens that the fowls will not show a partiality for soft food. This depends not so much upon the quality of the food as upon its preparation. When middlings or ship stuff is added, the fowls prefer it cooked or in a scalded condition. A mixture of corn and oats, ground, may be fed raw at times to adult fowls and be highly relished by them, but for chicks it should be scalded. When ship stuff is added the mass becomes somewhat sticky, and does not crumble very readily. All soft food should be mixed with scalding water. It not only renders it more palatable but also more digestible, and the birds will eat a larger quantity. When they seem disgusted with any kind of soft food, let the ingredients be varied somewhat. A little ground meat added, and scalded with the grain, changes the character of the food and provides a new dish. Fowls will prefer raw food at times, as a change, but as a rule, all the soft food should be well scalded, in order to avoid waste and loss.

FED OFF OF THEIR LEGS.

The following letter, from a subscriber at Wissakickon, Pa., explains both the trouble and the cause. We have the results of over-feeding. It says:

"I have a chicken house 14x25 feet and about thirty-five two-month old chicks in it at present. It is ground floor and has from four to six inches of hayseed covered over it for a scratching bed for them. I heat my brooder by hot water. I feed them warm feed in the morning, about three times a week,and also from a pound to a pound and a-half of fresh cut bone and meat per week. They have a head of cabbage before them at all times, and also have grass, chick-weed and celery tops, from a green house close at hand,and I give them, noon and night, changing, wheat and cracked corn. I also keep it as clean as possible, cleaning the brooder every day or every other day, with fresh water daily. I hope you will excuse me for making this so long, but I thought you might get a better insight to what was the matter with them. I keep plenty of ashes, oyster shells, charcoal and sand where they can get at them at any time. Now the ailment starts with a slight weakening in the legs and gets worse until they can hardly walk. They lay down to eat. I have not lost any lately, but at first they died. I have one that has been in this condition for about four weeks, and does not seem a great deal better, but they eat all right and grow slowly. Their droppings are all right."

The writer feeds *three* times a day in winter, with his hens shut in by snow, and he has made them too fat. The male should be removed from the flock also, as a precaution against the difficulty mentioned. In fact, whenever the hens cannot stand on their legs, they should be separated from those that are well and from the male.

SUCCESS WITH TURKEYS.

Having raised turkeys for years I thought I would write the results of experience, as a possible help to others, says a correspondent of the New York *Tribune*. As a turkey needs more than six months for growth, the earlier it is hatched the larger it will be for Thanksgiving market. Well fed, not over-fed turkeys begin to lay very early. Gather the eggs daily and keep in a cool place free from frost. Turn the eggs over every day, taking care that they are not jarred or jolted in handling. As soon as two dozen are collected, set them under hens, placing eight under a large hen or six under a small hen. Protect the sitting hen from being disturbed by laying hens, as eggs are sometimes spoiled that way. The hen turkeys should be shut up promptly as soon as they begin to sit. At this time they are quickly broken up, and soon start their second laying of eggs. The first turkey hen will have finished laying her second litter before the hatching of the first eggs set. Soon as she is well established in sitting, transfer some of the eggs first set to her. The turkey will usually own them if she hatches them, even if she sits but a day or two. This insures two litters of eggs from each hen turkey, and earlier hatching than would be possible if the hen turkeys did all the sitting, and at the same time brings off most of the young birds with the mother turkey.

For the nursery I use a space on our lawn about three rods by twelve. A smooth grass sod is most desirable. Place the mother turkey in a large coop (ground space sixteen or twenty inches by thirty-six or forty inches makes a suitable size) and the hens with the other turkeys of the same age in smaller coops, inclosed by a pen, say sixteen feet square; twelve by sixteen feet will do, one foot or sixteen inches high. Old fenceboards, if narrow, may be cleated together and are good enough. Twenty or thirty young turkeys are as many as will do well in one pen, and the turkey will own them all, as the hens leave them. Moving the coops to a fresh spot in the pen every day is very essential for the health of the flock. This is more necessary in damp, rainy weather than in good weather. I used to move young turkeys into some building in a cold, rainy time, but find by experience they do better in their pens, if kept clean and well fed. Move the pens about once a week, or as often as the grass becomes soiled, so that the coops are on a clean spot and the chicks have a clean, fresh spot to eat. I have never seen a season so wet that such treatment and good feed will not bring ninety per cent. through. In warm, dry weather they can be allowed more liberty. Accustom your old turkeys to each other by placing the coops near. The pens can be enlarged by turning several pens into one as the season advances. They are serviceable even after the young birds learn to fly over them.

I like best to feed a mixture made of soft curd, bran, cornmeal and middlings. Do not cook the curd harder than you would for the table. Use an equal quantity of meal and bran, and about half as much middlings as bran, with curd enough to mix nicely. Turkeys do well on such feed from the first. I see no necessity to feed boiled eggs or bread. Turkeys are very fond of onion tops and will eat them every day, cut fine and mixed with their food. A little pepper in their food is good in cold, wet weather, and is used by many. Sulphur is also good, especially as they "shoot the red." They should be fed five times a day for the first two weeks, and longer, if you are willing to devote the time. Watch them eat, and see that all get a fair chance, or some will eat too much and get crop-bound, while others go hungry. Give fresh water, or milk and water, at least once a day, in dishes so shallow they cannot drown. One advantage of a turkey hen with the little ones is, she watches out so closely for hawks and seldom looses from that cause, even when ranging through the fields. Continue to feed every night and they will always come home.

A well-cared-for turkey has few ailments, unless the place is infested with gapeworm or cholera germs. Occasionally a little turkey will not eat. If, on looking it over, you see nothing the matter with it, "cram it." It will usually be all right in a day or two if it gets enough food to keep up its strength. If it does not, in a couple of days it is so weak it will die, or be trampled to death by the others. If a turkey gets crop-bound give it a little butter, lard or sweet cream (unsalted butter is best), and rub the crop gently between the fingers to soften up its contents. In bad cases the treatment must be repeated. Turkeys hatched under hens should have their heads greased before they are a week old to kill any lice they may have. The hens should also be greased under the wings and on the head. Too much curd in the food will cause rheumatism, even in good weather. If their toes begin to curl, give a teaspoonful of iodide of potassium, mixed with their food, once a day, for a few days. To prepare the medicine, mix one ounce iodide of potassium to one quart of water.

To fight the gapes, keep the turkey on a clean sod. A little turpentine put either in the feed or the water once or twice a week is a good preventive, but care must be taken not to use too much, or they will not eat or drink it. When they have once gotten the gapes, fresh, air-slacked lime dusted over them a few times will cure, if applied soon enough. The best way is to dust the lime into the feathers of the mother in the evening so they will breathe it all night. Wiping out the windpipe with a quill dipped in turpentine is quite a sure remedy in the hand of an expert, even if badly affected, but I do not find that it works well when combined with the quicklime cure; in fact, the turpentine after the lime is apt to be a "sure kill."

WHAT IS ROUP.

How or why the name roup came to be applied to that form of tubucular disease which is accompanied by a discharge from the nostrils has frequently puzzled me. I can quite understand why the name diphtheria is given when a filmy deposit of tubercle or masses of it are formed in the mouth and throat, for there is a very close resemblance between this condition and diphtheria as seen in the human subject.

The term roup serves a very useful purpose if only applied when there is merely a discharge from the nostrils or mouth, or simply a thickening of the secretions, for it is very necessary for us to have distinguishing names for the different forms of tubercular disease. In all feathered creatures the disease germs of tubercle very frequently first attack the membranes lining the mouth. This is in consequence of their being in the drinking water of the bird, or picked up with food that has been contaminated by the excrement of creatures affected with tubercle.

The disease germs set up inflammation of the mucous membrane of the mouth and the inflammation soon spreads to the membranous lining of the nostrils causing a running discharge which is mostly supposed to be the result of a cold. The discharge soon begins to be thick, the thickness being, no doubt, mainly due to the presence of the bacilli of tubercle. Miliary ulcers begin to be formed, sloughing of the tissues follow, and the waste products which are thrown off increase the thickness of the discharge, which now very quickly becomes decomposed and gives off a very offensive odor. This form of the disease is known as wet roup; another form is known as dry roup, diphtheria, canker, etc.

The term canker is mostly applied to this form of the disease in pigeons. In them the tissues are very firm, and, consequently, except in the case of young birds, the growth of tubercle and the formation of ulcers, are as a rule slow processes, hence, probably, the term canker. In young pigeons the growth of the tubercle is sometimes very rapid and large cheesy masses of it are frequently found in the throats of squabs before the owner has noticed they were even ailing. This is usually the case when the disease has been contracted from their parents when feeding them. The parents themselves may appear to be perfectly healthy birds, the disease in them being in a latent condition. I know of nothing which resembles fire in its mode of action more than tubercle. Like fire, its spread depends almost wholly upon the material subjected to its action.—*Feathered World, England.*

FOUL FEEDING PLACES.

It was once supposed that the best mode of feeding was to throw the soft food in dirt, as the more dirt a hen could eat the better, but this is a delusion. Hens can get all the dirt they wish without having it forced on them. Many diseases are induced by compelling the hens to eat a mixture of food and filth, and all feeding places should therefore be kept very clean, as filth is not always discernible, and may be present in a decayed condition. The better plan is to feed on boards or in troughs, and clean them daily.

THE VICE OF LAZINESS.

A gentleman one day asked me what I thought was the most dangerous vice on a poultry farm, and I replied, 'Laziness.' He smiled and seemed to think I was joking but I assured him I was in dead earnest, and explained how this vice was dangerous to both man and fowl.

This may sound queer, yet I have never known it to fail. A busy, energetic man will see that his fowls are never allowed to stand around idle, that they are continually on the move and never tiring of taking good exercise. I can tell the nature of the man in charge the moment I get on the place. The fowls will be as busy as bees, the hens will be singing their tuneful lay, and the very appearance of the flock will show indisputable signs of health.

But it does not end here; the premises will be clean, you won't find the manure piled up in the roosting pens and that sickening stench so common in dirty quarters will be noted for its absence. That is the busy man's place, every inch of it.

How about the lazy man: Well, you cannot mistake him. You will find everything upside down; you will see dingy, dirty quarters, and you will see regular mounds of manure right under the roosts of the fowls. Think of the uncomfortable nights these fowls must spend with such a stench coming up to them. Perhaps fowls are not sensitive, perhaps they are. But an energetic,wide-awake man thinks they are. He will see that such things do not exist. And the fowls; they are enough to disgust one with the business. There they stand in the corners on one leg, with their bodies all drawn in. You cannot tell if they are sick or well; certainly not in the best of health, for well fowls do not shrug their shoulders when there is a little work to do.

What excuse has a man to offer for all this negligence, do you ask? They will tell you that they are over-run with work and cannot possibly attend to the hens. I always advise a man who is too busy to give proper attention to get out of work at once. Poultry will not pay if neglected and it is this negligence that is bringing about all failures. The work wants wide awake men, just as much as any mercantile branch of trade; it will not do to undertake the industry in any other way. Shiftlessness is rewarded by failure, while enterprise is met by success.

The man who begins a farm in size with his experience and enlarges as his experience grows, is the man who has his wits at work, who never gets beyond his ability, and the man who is making money. It takes "all kinds of people to make a world" but there is but one class that will succeed with poultry, and they are live men.

Market poultry is a branch that gives good returns to the right class, and I always welcome the new-comer when I know that he is constructed from the right material.—*M. K. Boyer, in Germantown Telegraph.*

DECAYING FOOD.

A majority of the diseases arise from the food left over after feeding. A very warm day,with a mass of fermenting ground food, and especially if after a rain, the conditions for the propagation of lice, gapes, bowel diseases and debility will be rendered very favorable. It is a custom to throw down the food on any available location, and if the hens clean it all away there will be a larger supply next time, until enough will be left to ferment. With whole grains the danger does not occur, but as there is always filth on the ground from the decomposed droppings, especially if the hens are in yards, there is no place where the soft food can be thrown without being contaminated. All soft food should be fed on clean boards or in troughs, and never on the ground. It is the soft food and droppings that render the conditions most favorable for gapes. The gapes and lice are the products of filth, and the quickest and surest mode of rendering the yards filthy is for the fowls to leave a portion of the food on the ground where the chicks are compelled to pick over it.

YOUNG DUCKS AND WATER.

Never give very cold water to young ducks, or they will have cramps. Tepid water should be used and it should be so given as not to allow the ducklings to get wet. Only their bills should get into the water. It is not generally known that "dampness is fatal to young ducks," but it is true. They become chilled and die, as they have only down instead of feathers. After they are well feathered they can go on the water without risk. During the warm days of summer there is not so much danger, but it is best to be careful at all times.

THE SITTING HEN AND LICE.

The sitting hen hatches more lice than chicks sometimes. The heat of her body on the nest provides the lice with the most favorable conditions for propagation, and they do not hesitate to take advantage of their opportunities. A broken egg, or even the filth from a rotten egg that has been crushed, is just what the lice desire. Hence be very careful to have all the nests clean. Use Persian insect powder liberally on the nests, and dust the sitting hens well with it at least three times a week, and the young chicks will be saved from annoyance when they get out of the shells.

LIME FOR FOWLS.

There is plenty of lime in the food. Oyster shells serve more as gritty matter than as a composition of the eggs, although to a certain extent they may partially assist in that respect also, but if fowls are properly fed there will be no necessity for feeding lime in any form. When hens lay soft-shell eggs, or do not lay well, it is not for want of lime, but generally because the hens are too fat, which obstructs the process of egg laying. If it is desired to feed lime, the most convenient form is in the shape of lime water, which may be used for mixing the soft food. Lime may be given, however, in any shape, if our readers prefer to place it before the hens. Old mortar (broken), bones, chalk,ground limestone,ground shells, or even plaster, may be used, but shells are sufficient. Unless the hens are in proper condition, and not too fat, all the lime they may eat will not prevent soft-shell eggs, though many persons suppose when hens lay soft-shell eggs it is because lime is lacking.

THE COMING OF WARM WEATHER.

Warm weather should be welcomed by the poultryman, and it should really save him a vast amount of work, yet a great many poultrymen dread the warm, close, sultry days of summer more than they do the coldest days of winter, simply because of one obstacle,—lice. But lice must be fought before the warmest days are upon us, and there is no time to lose. Lice multiply so very rapidly under the favorable conditions of warm days and nights that in order to be free from them, *all* must be destroyed. A single pair will, in a few warm days, become the ancestors of millions, and hence lice cannot be driven away by one application of an insecticide, or by giving the poultry-house a thorough cleaning, but the work must be kept up. Even after you are *sure* that no lice remain it is best to be doubly sure by continuing the work. Insect powder, whitewash, kerosene, lime and carbolic acid, all assistants, should be put to service. Lice breed so rapidly that no delays can be allowed. Whatever is to be done must be done vigorously and at once.

KEEPING PIGEONS.

Grain and seeds compose the food of pigeons, but they prefer worms when the young are feathering, or some kind of animal food. Corn, wheat and buckwheat are excellent, and a salt codfish should be hung where they can have access to it, as well as plenty of fresh water. Millet and hemp seeds are delicacies, and highly relished. Popcorn is better than any other variety of corn for them. Pigeons will not eat food that has been fouled, and they must have plenty of sand and gravel in the loft, as well as ground oyster shells. There is quite a large profit in pigeons by selling squabs, which bring $5 per dozen at some seasons. If the pigeons are given a high loft, they may be confined in wire-covered runs, when they will mate and breed, as well as be safe from hawks and boys; but in order to be successful the floor and nests must be kept very clean, or lice will get in the flock and cause a loss of the young ones. To guard against lice is the most important duty connected with raising pigeons.

HENS CARRYING DUCKLINGS.

Ducklings are so easily raised by hens, and require so little care, compared with chicks, that it will pay to have hens to sit on ducks' eggs and bring off the young. Of the large eggs of the Pekin, eight will be sufficient for a large hen. It is not necessary to turn the hen and ducklings out, or allow them to go near the water. On the contrary they should be kept warm and dry. Young ducklings should not be given very cold water to drink, as it cramps them, and under no circumstances must they become wet. Feed them liberally and often, and give the hen and ducklings plenty of litter upon which to sleep at night. As they grow very rapidly they soon become too large for a hen to cover them, and for that reason they should be looked after at night, and fastened up in a warm, snug box.

PREVENTING LAYING.

It is not difficult to cause a flock to cease laying, if they are fed on certain foods that will not benefit them in any manner. Recently, on a farm where a large number of hens are kept, and which were producing eggs regularly, the production suddenly ceased. It was quite awhile before a solution of the problem was found. It appears that during "hog-killing time" the hens were regaled with many choice pieces of fat meat; and with quite a large amount of waste that was supposed to be suitable for the hens; they were given at times all they would eat, the result being that the hens were over-supplied with carbonaceous food, became fat, and egg-production ceased. Lean meat is excellent as a substance for producing eggs, but fat meat should never be fed to laying hens.

FRESH EARTH UNDER THE ROOSTS.

There is no better disinfectant than fresh earth. If it is scattered freely under the roosts, and a handful of plaster sprinkled over the earth, it will not only greatly assist in destroying foul odors but also in preserving the manure, which can then be swept up and put in a barrel without further preparation.

TWO KINDS OF IMPROVEMENT.

We give below two extracts, each showing how wide apart the "fancy" breeding is from utility. It depends upon how the view is taken and the standpoint. The first, from the *Poultry World*, headed "Vulture Hocks," gives its mode of improvement, saying:

"Good breeding birds will generally produce good progeny, yet even with the best of stock as breeders, we sometimes find several poor specimens in the flocks of young birds. Variation is one of the laws of nature, and it is utterly impossible to have strict uniformity, though we can, by careful handling, produce an approximation of perfection. Poor stock will not produce first-class progeny, we all know, yet the variations noticeable in the produce from even the best of breeding birds are sufficiently numerous to cause us to exercise the utmost care to prevent deterioration. Partial failure or indifferent success is what has discouraged many a young and over enthusiastic breeder, but it only serves to cause renewed energy on the part of the true fancier, to compel Dame Nature to produce more perfect specimens. The vulture hocks in pure-bred poultry are not so frequent as formerly, and are justly regarded as a deformity and a disqualification, though it will occasionally crop out when least expected. Never breed from such birds, no matter how good their other qualities may be, for, if you do, you will intensify the undesirable feature, and it may take you several seasons to entirely breed it out of your flock of fowls."

The above advises its readers to improve by avoiding vulture hocks, and even goes so far as to say, "Never breed from such (vulture hocks) birds, no matter how good their other qualities may be." Here we have a complete sacrifice of all that is useful in a bird, for no matter how good it may be, it must pass out of existence if it has vulture hocks. As a comparison with the above is an extract from the *New Hampshire Mirror*, as follows:

"If eggs were sold by the pound it would revolutionize the breeds. As we have before shown, the hen that lays the largest number of eggs may not really be performing as great a service as one that lays fewer eggs but which are of larger size. Suppose a hen lays 120 eggs in a year, the eggs averaging ten to the pound. Her product would be twelve pounds of eggs in one year. Now, let us suppose that another hen in the flock laid 104 eggs, the eggs averaging eight to the pound. In the first case the hen that produced 120 eggs would be the more valuable, yet she has not performed as much service as the one which produced but 104 eggs, as the eggs of the latter are a pound heavier, and if eggs were sold by weight she would give a larger profit on fewer eggs. Selling eggs by weight gives both the producer and the consumer a fair sale and purchase, and farmers would begin to select the breeds that produced large eggs. They would then be compelled to improve their flocks in order to secure the best market prices for their eggs."

The *Mirror* is aiming to *compel* all to improve by advocating a system which will enable the poultryman to have better hens every year. The color of the feathers, or the lack of some little essential that is really undesirable, does not render the fowl useless. In the one case there is no genuine improvement at all, but in the other is pointed out an excellent mode of progress.

THE SOUTHERN FANCIER SUGGESTS.

Editor Downs, of the *Southern Fancier*, Atlanta, Ga., sometimes gets out a few witty expressions, which are highly enjoyed by all who read the *Fancier*, but the following has a whole mine of truth hidden down deep into it, and naturally calls up a few "reflections." He says:

"Theodore Sternberg wants milliners and customers to utilize the fluff of the Buff Cochin and Dark Brahma as edging, "the same as swans' down and other kinds of fur are now used." He thinks it would be artistic and stylish. Good idea. We see no reason why it wouldn't be. But, then, it would cost—away up! And if it got to be the *ton*, Buff Cochins and Dark Brahmas would be in a demand at big prices, and such a fluff boom as we should see would surpass all the crazes past or present. On this hint, we have laid in a stock of Dark Brahmas. Thanks, Theodore, for the suggestion. Let the fluff boom go on."

When he states that Cochins are now being bred for fluff he speaks just what is true. An excellent breed of fowls is "going to the dogs," simply to put a heavy fluff and a few more feathers on it. As long as one man has a bird with a heavy fluff, all the others strive for it. When the farmer comes along and buys some of them, he soon begins to wonder why they do not lay as well as his common hens.

IT WAS THE EGGS.

Mr. O. F. Fuller, Blackstone, Mass., who has been hatching nearly every egg in his incubators, suddenly finds that he cannot hatch any chicks at all. His difficulties are given in his own words below. He says:

"I am in a fix, and we are all having just such luck with our incubators around here. Mine is a hot water machine. The first two times that I ran it, I had splendid luck. One time I hatched forty-four chickens from fifty-three eggs. Another time I got eighty-six chicks from 110 eggs. In December, 1892, I got, well I can't tell just how many, but I took out of one drawer sixty-three live chickens from seventy fertile eggs. I then bought two more machines and since then the very old fellow himself is inside of the three incubators. The first three times I never put a drop of moisture inside of the incubator, the results being as given above. I run them just the way I did at first, and cannot get the results. I run them with about forty-five degrees of moisture by my hydrometer, and about fifty-five the last week. I have had bad luck since January. I have mailed an egg with this letter for you to see about the way the eggs are that do not hatch. I have tried no moisture, and then plenty of it, but it does not make any difference. I am now trying one incubator the first week with no moisture; the second week a little, and the third week more. I keep my temperature even, about 102 degrees the first ten days, 103 degrees the last ten days, and have run one 101½ degrees the first week; 102½ degrees the second week, and 103 degrees to 104 degrees when hatching, but got no better results. I run my incubators in a cellar. What "sticks" me is that I had such luck at first, and such poor luck since then. I do not know whether the weather has anything to do with it or not. It has been very cold here—twenty-four degrees below zero. For weeks it was ten or fifteen degrees below zero, but my Leghorns did not freeze their combs.

If an incubator is so operated that it hatches nearly every egg, and when again operated in the same manner, with unfavorable results, it is reasonable to suppose that the fault is not with the incubator nor the management, but with the eggs. With the temperature down to twenty-four degrees below zero, and for weeks at ten or fifteen below, it is very difficult to secure eggs that will hatch. Hard winters not only cause the eggs to be unfit for incubation by reason of the prolonged cold, but also prevent the hens from securing exercise. We find the same difficulty in other sections.

THE WAY TO ROUT LICE.

We have before called attention to bisulphide of carbon as a lice destroyer, which is accomplished with but little difficulty. To show how beneficial it is we give the words of Dr. Schneider, of Paris, who says:

"The very next day after using it I was agreeably surprised to find that the enemy had left, leaving none but dead and dying behind, and on the following day not a single living insect was to be found, while my birds were sitting quietly on the roosts enjoying an unwontedly peaceful repose. This lasted for twelve days, till the sulphide had evaporated. Twenty-four hours later a fresh invasion of lice had put in an appearance under the wings of the birds in the warmest portions of the house, where there were no currents of air. I replenished the supply of sulphide, and the next morning, only a few of these were remaining. The next morning every trace of vermin had disappeared. Since that time I have personally made a great number of further trials with the sulphide, with immediate and absolute success. I should recommend the sulphide of carbon to be put in small medicine vials hung about the pigeon house or poultry roost. When it has about three parts evaporated, the remainder will have acquired a yellowish tinge, and no longer acts so completely as before, but if it be shaken up afresh it will still suffice to keep the enemy at a distance."

Bi-sulphide of carbon is a liquid, with a most intolerable odor. It is very inflammable, like gasoline, hence at no time must a flame come in contact with it, but otherwise it is safe and harmless. It is *sure death* to all living vermin (and to human beings, too, if *confined* in a room with it). The plan is simply to hang it up in the poultry house, using wide-mouth bottles It is cheap and can be had of any druggist. Poured into rat holes, and the holes stopped, it kills rats instantly.

HOW BEST TO PROCEED.

A reader, who does not give his post-office, asks us to put him on the track of how best to begin, and desires us to reply to him in our April issue. Unfortunately, we did not receive his letter in time, and as he gave no post-office we could not reach him. He says:

"How should one best proceed who cannot begin the poultry business before the middle of April, and who expects to use Plymouth Rocks, Pekin ducks and White Holland turkeys."

Any reader can see at a glance that as he does not state how he is situated, with no details, nothing about capital, poultry houses, or location, that we cannot assist him, though we would cheerfully have endeavored to do so. He "burnt all the bridges behind him" by not giving his post-office, and hence shut off all communication. It is an impossibility to give a satisfactory reply to a question like the above.

LEGHORN BROILERS.

A cross-bred Leghorn will produce fine broilers, and even a pure-bred Leghorn chick is excellent, but they should be sold by the time they reach twenty-four ounces, as they do not grow as rapidly as the larger breeds after they are eight or ten weeks old, but up to that age they will keep pace with the largest breeds in weight.

NON-SITTERS.

There is really no breed that can be classed as strictly non-sitters. It depends upon the condition. Any hen will sit if she becomes fat, but the reason the Leghorns and other breeds do not readily sit is that they lay a large number of eggs, which call for most of the food eaten, thereby preventing an accumulation of fat, to say nothing of the fact that as such breeds are active they take plenty of exercise.

SCABBY LEGS.

This is the season when the legs of the hens will become scabby. It is due to a minute parasite, which gradually builds a lime substance on the shanks. Any kind of grease will cure it, but the remedy generally used is to add a teaspoonful of kerosene to a gill of melted lard, which is well rubbed on the legs of the fowls once or twice a week, and which soon renders the legs clean and bright.

MEAT AND BONE.

We do not approve of keeping food before the hens all the time as it allows them to overfeed and become fat and lazy, but we believe that if a box of ground meat is placed before the hens, and kept filled, that the hens will lay better, provided the balance of the food is composed largely of grass or steeped hay. It is not expensive, as less grain will be required. No food is expensive that will make hens lay, and that is the main point to consider, no matter what the food may consist of. It is not the abundance of food that provides eggs, but the quality of it, and no flock that is liberally supplied with meat will fail to give satisfaction if good birds be used.

JEWISH HOLIDAYS AND GEESE.

Our Jewish citizens are very partial to geese, which they always buy alive, and never dressed. They have certain holidays, which are strictly observed, and at such times geese are in demand. By making a note of these holidays, which are given in the almanacs, and shipping to market in time for the geese to arrive two days before the holidays, better prices will be obtained, as the demand is then greatest. We always make a note of the time when turkeys sell best, such as Thanksgiving, and the same rule may be observed in regard to geese.

A BALANCED RATION.

The experiments made in feeding hens show that the greatest number of eggs are secured when the hens receive a more nitrogenous ration than is afforded by corn and wheat. If the hens are kept on grain, a change of food will sometimes induce them to begin laying. They often refuse certain foods because they have been overfed with such. It has happened that one or two feeds of lean meat, or a ration of scalded bran with cottonseed meal added, induced laying, which result is due simply to the fact that the hens were supplied with something that was lacking.

DESTRUCTION OF CHICKS.

The warm weather is very severe on young chicks. They cannot stand the sunshine with no shade, nor can they endure a close coop. Bowel disease is as prevalent among them in very warm weather as with babies. The summer seems to crowd a great many difficulties together. The food ferments, the heat is oppressive, the wet grass is injurious in the morning and lice increase and swarm over every part of the body. The majority of persons look for lice but if they do not find any of the little red mites they conclude that there are none of the pests, but the real enemy is the large gray body lice, that prey upon the heads and necks of the chicks, and which cannot be found without searching down close to the skin, at the base of the feathers. Grease will kill them quickly. When the chicks are sick, appear droopy, have bowel disease, and apparently die without cause, look for the large blood-suckers, only one of which may so worry a little chick as to kill it. While the cold of winter seals up the odors, summer sets them free; hence the strictest cleanliness is also necessary.

RAIN STORMS.

Rain storms do but little damage to grown fowls or large chicks, if the weather is warm, but if a very hard and sudden shower comes up, and small chicks (weighing less than a pound) are caught in it, the chances are that a large number of them will be killed. Some place should be provided for them to which they may resort in such emergency, while often it may be necessary to drive them in.

NUX VOMICA FOR FOWLS.

Four little pellets of nux vomica, which can be procured from any homœopathic druggist will soon put a drooping fowl in condition when affected by bowel diseases. It is claimed that nux vomica or strychnine will not kill poultry, of which we do not know, but we are certain that its use in small doses is very beneficial. We do not advise persons to use birds on the table until some time afterwards, however.

THE ROOF AND FLOOR.

A dry roof and a tight floor, so as to prevent dampness from above and draughts from below, will save the flock from roup. A floor full of cracks, with the wind blowing in underneath, is worse than keeping the birds outside. If the poultry-house is to be built, see that the roof and floors are tight. Do not attempt to save money by using anything that is cheap for the roof. Keep out the dampness, and half the danger will be over.

ARE BANTAMS PROFITABLE ?

Bantam eggs do not sell well in market but they are just as serviceable for home use as are eggs from the larger breeds. In proportion to their size, Bantams lay larger eggs than any other fowls, and, if we consider the weight of the eggs, they lay more than any large breed, and also in proportion to food consumed. Although small, a larger number can be kept on the same space, and, taking all things into consideration, no breeds are more profitable.

GRASS AND MEAT.

Grass, and plenty of it, with meat at night, is the best mode of dieting for eggs. Give plenty of bone meal, also, and allow very little grain. During the extremely warm weather, too much corn will kill such hens as may be very fat, and they can also be sun-struck. Grass is not only a cheap, but a healthy food. It will give the yolks a deeper color than will any other food that can be allowed. In feeding meat, use only the lean. Cooked vegetables, however, may be fed liberally.

TO SET A HEN.

When she goes on the nest and seems determined to remain, do not leave her where the other hens can annoy her, but remove her to some secluded location where she can be quiet and undisturbed. Remove her at night, taking the nest with her, if it is movable, and give her two or three porcelain eggs, keeping her on the nest by closing the entrance for twenty-four hours. Then feed and water her, give her ten eggs to cover, if the weather is cold, and do not go near her except to feed her. Keep water and a dust box convenient for her.

HOW MUCH SPACE FOR A FLOCK.

The space depends upon the soil and the climate. Ordinarily the rule is to allow ten square feet for each hen in the henhouse; that is, a house ten by ten feet should accommodate ten hens, and the yard should be ten by fifty feet, at least, or larger. On sandy soil a small yard is more easily cleaned, but on heavy soil it would be better to have two yards, so as to change the birds from one to the other as may be necessary. In winter, in severe climates, the house should be large, or a shed should be connected with it, open to the south, as the yards will be of but little service at that season.

USING SUNFLOWER SEED.

If you have raised a lot of sunflowers, as soon as the seed is ripe hang the heads up until well dried. It is no easy matter to separate the seed from the head, but if the head is chopped into small pieces the hens will soon find out how to get them off. At first the hens that are unaccustomed to the seed will not eat them. To teach them to eat them, shell off some of the seed and give nothing else to the hens for two or three days. After they accept such food then allow one feeding of the seed every other day, and feed somewhat sparingly, as a surfeit of seed will often cause disorder of the bowels.

PLYMOUTH ROCK AND BRAHMA CROSS

A cross of the Plymouth Rock and Brahma produces not only fine, strong, vigorous chicks which will prove hardy, but also excellent fowls for market, the yellow skin and legs and general appearance being not easily excelled. We do not claim that the cross produces the best broiler or most desirable market fowl, for a cross of the Game and Dorking is far superior; but the great advantage of the Plymouth Rock and Brahma cross is its hardiness, and we venture to assert that twice as many of them can be raised to a marketable age as of the Game cross, hardiness being what the farmer desires, as the object is not so much the hatching of them as the selling.

THE POULTRY KEEPER.

Subscription Price, 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

COMMUNICATIONS

To THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

THE green bone, cut up fine, is the thing to make the hens lay.

THIS paper is only fifty cents a year, but it is worth fifty dollars.

IF you have not had the bound volume for 1892 you can get it now.

WHO has 500 or 1,000 pullets to sell? Mr. A. J. Coe, Meriden, Conn., wants them.

MRS. L. N. CLOUGH, Springfield, Mo., wants a competent man on a poultry farm.

A GOOD crop of corn is going to be put in by "Uncle Mike" this year—for his hogs.

THE *Practical Dairyman* and the POULTRY KEEPER, both at one price—seventy-five cents.

GROUND oyster shells make excellent grit. They are so cheap that everybody can use them.

WE did not hear of any sales of poultry papers the past month, for which we are truly thankful.

THE railroads and express companies will not reduce the rates to Chicago, which means that many persons will not be there at all.

A BANTAM may be small, but it will lay more eggs, by weight, in proportion to its size and the cost of the eggs, than can be procured from any large breed.

WHEN you take up a breed, begin to hatch your pullets from the eggs layed by your best layers. Retain the males from eggs layed by selected hens also.

WE wish to state that F. D. Beck, of Wellsburg, W. Va., is in no manner connected with this journal, and is not authorized to collect subscriptions.

NOW that Dow has stepped aside, the old Langshan communication writer in Vermont, is at his occupation again. Who is guilty of ressurrecting him.

IT is time that the League begins to fix dates for next year, as the dates of several shows are already published. What is the League going to do? Where is the president?

THE Show at Denver was a success, all expenses being paid, with prospects for a better show next season, the dates being January 14th to 20th. Mr. J. L. McDowell, Denver, is secretary.

MR. CHARLES GAMMERDINGER has been elected president of the Ohio State Poultry, Association, at Columbus, Ohio. He was away from home at the time, but the office was given him, however.

MRS. S. C. SEARIGHT, Carlisle, Pa., was left out of the list of winners at Carlisle by mistake, she having won four first and six seconds on Plymouth Rocks, Langshans, and Golden Wyandottes.

THE Swiss Mountain Kennels, Germantown, Pa., have recently imported a grand St. Bernard dog at a cost of about $4,000, according to the New York papers. It perhaps has the finest lot of St. Bernards in the United States.

IF you bought eggs this spring, keep the pullets, select the best and advertise eggs for sale next season. Any person has the right to do so. You are just as competent to breed fowls as many others.

MESSRS. OWSLEY & DUNNINGTON, Darlington, Ind., report that they have been highly gratified over the testimonials favoring their roup cure, and believe that it is one of the best remedies offered.

MAY is not too late to hatch Leghorns. In fact, even Brahma and Cochin pullets, hatched in May, will sometimes lay as early as those a month or more older. The feed and the breed should be united.

AMONG the large poultry farms may be mentioned that of J. R. Brabazon, Delevan, Wis.; C. Gammerdinger, Columbus, Ohio; G. S. Nissly, Saline, Mich., and the duck farm of Hallock & Son, Speonk, N. Y.

THE Hendricks County Indiana Poultry Association has arranged its date for December 12th to 16th, inclusive. Mr. F. L. Sewell being engaged to judge the show. Mr. O. P. Phillips, Amo, Ind., is Secretary.

OWING to the illness of Mr. F. A. Mortimer, Pottsville, Pa., he offers some bargains in Langshans, Minorcas, Anconas and Indian Games, as well as offering his entire stock of St. Bernard dogs. All will be sold cheap.

EDITOR HAMILTON says:—"The KEEPER might think the Wyandottes would be a better fowl if they were called the 'Jacobs'." We can state that they came very near having the name of *Hamiltonians*.

POULTRY KEEPER SPECIAL No. 2, is now ready. It is full of valuable information, and is just what you wish. The price is twenty-five cents. In it we reproduce much of that which has appeared in former issues.

BREEDERS have ceased to "petition" express companies. A few years ago it was attempted to introduce the "parcels post" system in this country, but the power and "influence" of the express companies may have put an end to it.

THE cutest dodge yet played on a poultry paper is that of the man who wrote the New England *Fancier*, that he did not intend a "free ad," but wanted to "defend something," though he worked it in all the same. An old trick. Go foot, Dow.

WHEN the little chicks begin to droop, look for the large head lice. When your young turkeys seem to be in perfect health, and then suddenly begin to droop and die, you can depend upon it that the "blood suckers" are at work on their heads.

THE recent cold winter has knocked to pieces all the theories of winter layers and non-winter layers. Birds with tall combs layed right along with the pea comb, rose-comb and other varieties. After all, it is the food and shelter instead of the comb.

EDITOR WARNER says he is not responsible for what his correspondents may write. We will remind our good brother that under the law he *is*. The publisher is always responsible for what appears in his paper, as it is his business to guard his columns.

IF you wish a binder, so as to preserve your copies of the POULTRY KEEPER, we have a special one for that purpose. The price is fifty cents, postpaid. It is just the thing, as each copy of the paper should be saved. You can put each month's issue in the binder as fast as received.

ONE of Chicago's chicken "cranks," Capt. A. B. Kreider, 839 Matteson street, has made preparations for receiving the poultry fraternity, and the A. P. A. members. He wants the "boys" to come and see him, and stop at his hotel. He is one of the old subscribers of the POULTRY KEEPER.

WE wish to know what is being done with the League of American Poultrymen. It was to fix the dates, and it was to have a large field open for work. Where are its promoters and advocates? Are they asleep? If any dates are to be fixed, now is the time to get at them.

AND now comes Mr. Fred Grundy, Morrisonville, Ill., and says that we credited "Fanny Field" with an article written by him. We were not aware that Mr. Grundy wrote it, hence the mistake. We believe in giving credit to all to whom it belongs.

THE White Wonder Club has forty-five members, and the breeders intend to make a special exhibit of them at the World's Fair. Mr. W. N. French, New Haven, Vt., who introduced them, states that the breed is making friends in every direction.

MR. A. C. HAWKINS, Lancaster, Mass., has been breeding Holstein cattle very extensively of late, but his flocks of Plymouth Rocks and Wyandottes still receive his attention. He has ceased to exhibit, preferring to supply the exhibitors, and for that reason he does not wish to compete at the shows.

IT is a poor bird at a show that scores less than eighty-five points, and it is a good one that gets up as high as ninety-five. This leaves a range of ten points only. The judge who makes a difference of five points really makes a mistake of fifty per cent, but if they come that close they claim that they score *nearly* alike.

"UNCLE MIKE" BOYER is now one of the editors of the POULTRY KEEPER, and will be a valuable acquisition. We wish to say to those who are looking for the editor, and who may want "satisfaction," to ask for Uncle Mike. Any gold watches, silver-headed canes, or other *testimonials* belong to the "other editor." Please don't get us "mixed."

A NEW candidate in vocal music has made his debut at Danielsonville, Conn. His voice is said to be superb, and reaches to all parts of the largest hall. His name is Master Raymond B. H. Hamilton, and he is the son of the editor of the *New England Fancier*; age, at time of writing this, just twenty-four hours.

"PROFITS in preserving eggs" is an article now going the rounds of the poultry papers, by Mrs. Eliza Foster. We gave it with our comments. We fear that it is an old J. M. Bain trick. It offers a recipe to any reader, but we will state that it is best to avoid those who offer something for nothing, especially when it is being urged so earnestly.

THE annual meeting of the Pittston, Pa., Poultry and Pet Stock Association was recently held, and it was decided to hold the second annual show January 23d to 26th. The following are the officers: A. O. Farnham, Pres.; J. J. Bryson, Jr., vice Pres.; E. W. Stark, Pittston, sec'y; W. R. Allen, ass't sec'y, and F. P. Casper, treas.

THE Black Spanish is an old breed, and in addition to laying eggs of large size they are non-sitters. Mr. John Bennett, of Sunman, Ind., and Mr. B. H. Hoodley (a breeder who has bred them for forty years) claim that they layed clean through the recent cold winter, and that there was not a day during the winter that they did not get eggs.

WHY do the hens over in England lay more eggs in a year than do hens in this country? Some persons say that it is the *climate*. Nonsense; the climate of England is damp compared with ours, and they have the roup, cholera and other diseases to combat as well as our poultrymen. The cause is, that in England they keep on each farm one breed for eggs and another for market, while in this country we aim to secure meat and eggs in the one breed, in excellence, and cannot do it.

SOME of the papers are now filled with articles pro and con on score card and comparison judging. Last year it was great fun to attack comparison, but this year even some of the most ardent admirers of the score card system have become skeptics. The "one a minute" business was too much for their nerves, and at every show hereafter there will be "traps" set for the unsuspecting judge to try his hand two or three times in one day on the same bird. Then the "condition" excuse will not avail.

"WHAT ails my hens—they are dying—please give a remedy." Yes, we would do so, but you will have to write us something more than the fact that the hens die. You must give *details*, and let us know what *you* have done for them in the shape of quarters, feed, etc. A hen is like anything else—she may die of many causes.

BRO. BRANDAY, of the *Practical Poultryman*, thinks that we used a White Minorca cut for White Leghorns. We do not agree with him. True, the birds showed large combs, but cuts are not always exact, especially when some breeds are so nearly alike, and the *yellow* legs will not show with *black* ink.

TWO EDITORS NOW

We have secured the services of Mr. M K. Boyer as one of the editors of the POULTRY KEEPER, and his help was with us in this issue. He is not a "correspondent," but assists to edit the paper, and will no doubt add to its attractions. Living at Hammonton, N. J., and always busy with experiments, he will keep our readers well supplied with valuable facts.

BUYING EGGS IN MAY.

May is an excellent month in which to bring out the chicks, and if properly managed the pullets that come as late as June may be made to grow fast and come into service as layers in time for winter. One of the causes of the late chicks being retarded in growth is the annoyance of lice. Keep down the lice and the chicks will grow faster than did those that were hatched earlier in the season.

COLORADO POULRTYMEN.

The Colorado Poultry Association had a very successful show last February, and all expenses were paid promptly, with premiums in full. January 14th to 20th, has been selected as the next date, the show to be held at Denver. The officers are as follows: Pres., Day B. Hoyt; Sec'y J. L. McDowell; Treas., John Hess. A full Board of Directors were also elected. We wish the Association success.

WANTS FIGHTERS.

With due respect to the writer, we give the following letter, and do so because we have received others of a similar kind. The writer says:

"Will you kindly inform me which is the best breed of chickens, in your opinion. I want to raise them for fighting purposes."

In reply, we will state that there are a great many strains of Pit Games, but our interest in that direction has been too lukewarm to permit us to state which is the *best*, and we doubt if such a question could be answered by any one. We regard fighting as cruel, but we can state that many keep the Pit Games for their excellent table qualities, and also because the males will do battle with hawks. Outside of their uses for the pit they possess some excellent qualities.

POULTRY KEEPER SPECIAL, NO. 2.

The "Poultry Keeper Special, No. 2," is now out, and will be sold at twenty-five cents per copy. Like the No. 1, it is made up of former issues of the paper, but the mine of information which it contains renders it very valuable. The following is a list of some of the contents:

Feeding for Eggs.—Eight columns, with numerous tables.

Points on Capons.—Three columns, with fifty items.

Artificial Incubation in Egypt.—Three columns, illustrated.

Poultry Appliances.—Nearly fourteen columns, with forty illustrations of houses, troughs, fountains, nests, coops, roosts, fences, etc.

Points in a Nut Shell.—Containing forty rules on raising broilers, with rules for operating incubators, feeding, turkeys, lice, express rates and many other subjects.

All about Turkeys.—Eight columns, including thirty-seven condensed rules of management.

Lice.—Ten columns containing fifteen illustrations of the different kinds of lice, with rules and preventives.

Ducks.—Five columns on "how to manage young ducklings," including comparisons with chicks, and tables.

Harper's Brooder.—With thirteen illustrations of the several parts.

Testing Eggs.—Showing how to test eggs by different methods.

Managing for Eggs.—Five columns giving points on feeding, breeding, mating, etc.

The Gape Worm.—Illustration showing its position in the windpipe, etc.

We may add that there are also several minor subjects included that may be of interest. The book contains seventy-two illustrations, and about a dozen leading subjects. Each subject may be said to be a whole book in itself, and it is almost impossible to obtain a book at a high price which will give so much valuable information at so low a cost.

GRADING UP POULTRY.

"Many of our farmers hesitate to improve their poultry, fearing the cost will be greater than they can afford, which is a mistake. They begin to calculate on the probable cost of two or three hundred fowls at two or three dollars each and inferior stock. And yet, even if it were to cost this amount, we do not know but what it would be profitable in time to make the change," says J. W. C., in *Breeder's Guide*. "The cost need not be a fiftieth or a hundredth part of this sum. We can take a farm with one or two hundred fowls and in two seasons have none but thoroughbreds upon it, and all with a direct outlay of only a few dollars. It will, however, require a little work and care. It will not do to buy a trio or pair of fowls of some good and desirable breed and, turning them loose in the flock, expect in a year or two by some magical means to find the whole flock like them in form and feather. Plenty of outbuildings are usually found on any farm in some corner of which a nice little coop may be fitted up, with a small run attached to it, at a trifling outlay of time and labor. Here the work of improving the farm fowls will really begin. Some care should be exercised in building this yard to make it so that the mongrels, who usually fly like pigeons and can crawl through the smallest opening, may not get in with the stock and fight with or otherwise disturb them. Wire netting for roof and sides of such a run is the most effective way of keeping them out. The fowls and such a yard complete the fixings necessary to change the stock on any place.

"Whether to start with fowls or eggs is a question which each one must settle for himself. If we were doing it and in a hurry to make the desired change, we would start with fowls, gaining a year's time at least by so doing. One man will never buy anything but fowls, while another is equally positive that eggs are at all times the cheapest way of getting new fowls. But in either case we will suppose the farmer has a few hens or pullets ready to lay and the smile of spring is beginning to appear between the rain and snow storms of March. The best male and the hens or pullets should now be placed in the yard, if not already there, and all eggs carefully saved for hatching. Soon some of the common hens will become broody; they can then be put to use, hatching the eggs of the yarded fowls. Do not set an egg of the common stock, and, if any of them steal their nests, raise the chicks until large enough for broilers, then dispose of them, thus giving the good chicks the whole range and all the attention. Two or three hens of some non-sitting breeds, or four to six of those which lose more or less time in waiting to sit, will furnish the eggs necessary under favorable circumstances to raise all the fowls needed to replace the common stock.

"The last and most important act of the change comes in killing or selling off every one of the old fowls. Right here is where many lose the result of all the outlay of time and money. They have a few pets among the superannuated old cocks and hens, and, keeping them, in a few years few traces remain of the once-fine fowls which graced the place. With good fortune, ducks, geese and turkeys can be improved in the same way from a single pair of birds or one or two sittings of eggs. There is no excuse for keeping poor fowls when a good flock can be had at such a small outlay."

REDUCED PRICE.—After part of this issue was on press L. C. Beatty, Washington, N. J., notifies us that his prices of *all varieties* of eggs are now $2.00 for 15, and $3.00 for 26.

THOSE BINDERS.

We have recently had manufactured some Self Binders for THE POULTRY KEEPER whereby anyone can bind their own, in a neat and substantial manner, each month as received. They will hold two years', and the price is sixty cents, postpaid. We said fifty cents at first but found we were losing money.

GOOD FOR CHICKENS TOO.

"I keep a bottle of chloroform in the house, and when I have superfluous cats or other small animals to kill, I pour some in a cup and put it in a small, tight box, into which I then put the animals to be disposed of. They can feel no pain, go to sleep immediately, and in two or three hours are dead. And who would not rather pay ten cents for chloroform than inflict a torturing death on a helpless, innocent creature?"—*Cor. Wisconsin Farmer.*

SCRATCHING PLACES.

Any place to which the hens will resort may be used for scratching. They prefer to be under a shed in winter or in a shady place in summer. Anything in which the hens will scratch will answer, such as leaves chaff, cut straw, or even dirt. Sprinkle a little whole grain in the litter once a day, and the hens will soon learn to hunt for it. It is not the quantity of grain that should entice them. Only a small proportion is enough, as it should be the aim to keep the hens busily at work in order to keep them in condition.

USES FOR COAL ASHES.

Save all your coal-ashes. They are capital for making or mending walks in spring; and in winter weather what can you have better to strew on the ice on the pathways to keep you from slipping than some sifted coal-ashes? In our greenhouses we have another use for coal-ashes. We sift them through a large-meshed sieve, to separate the big clinkers and coal, then sift the ashes again through a fine-meshed sieve. The ashes we spread on benches under potted plants and the coarse siftings we use for drainage in flower-pots. Before using this stuff for drainage, we put it into a tub of water and toss it around with a big stick to wash it clean, overflowing the water at the same time, for it is proper, if you use drainage at all in your pots, to use clean material; it makes the drainage so much more perfect.—*Gardening.*

TOBACCO FOR GAPES.

Colonel F. J. Curtis writes to the *Rural New Yorker* that he has cured all his chickens of the gapes by making them inhale tobacco smoke. He says: "The treatment has done them no harm, and the trouble of smoking is but little, if it is done when they are in the coop. It takes but a moment to put them in a basket, and five minutes is as long as they should be subjected to the inhalation of smoke, and not so long if it is strong enough to produce stupor. As soon as a chick is stupefied, it should be taken from the basket and laid on the ground, when it will revive. Our chickens were nearly dead with the gapes when first treated, but got better with each treatment, and were cured after the seventh."

If it is necessary to repeat the above treatment seven times, we should think it quite troublesome. Our own plan is much easier, and, so far, has proved very efficacious. Catch each little sufferer, and, when he opens his little bill by way of protest, drop a lump of camphor as large as can be swallowed with ease. When the disease had been allowed to run we were obliged to repeat the dose, giving in addition a pill of bread thickly sprinkled with red pepper. We did not lose a single chick, and some were, apparently, in the last stages.—*N. Y. Weekly Herald.*

WHY CHICKS DIE IN THE SHELLS.

The following, from Mr. J. L. Campbell, West Elizabeth, Pa., manufacturer of the Eureka Incubator, is well worth the attention of all who are interested in learning the cause for the loss of chicks during incubation. Mr. Campbell is an old veteran at the business, and we are under obligations to him for his views, which he gives as follows:

I have read the article, on page 186 of the March issue, from Mr. L. E. Ross, and it contains so much that is correct, and also so much that is not correct, that the spirit moves me to criticize the article a little, thinking that thereby more light may be given on a subject of great interest to all users of incubators, viz.: "Why do chicks die in the shell in incubators."

First, Mr. Ross says that eggs contain all that is necessary to produce a live, healthy chick. That is perfectly correct, and I will add, a little more than all, for if a certain amount of evaporation does not take place from the egg it will not hatch at all, and this shows that eggs require no moisture at all, but the air in the incubator, under certain conditions, does require moisture. This same point is claimed in my catalogues printed twelve or fifteen years ago, though it is no doubt new to many at present interested in the subject.

Second, The points which I wish to criticize are in regard to his ideas of ventilation. There are errors there which need to be pointed out, and as you, Mr. Editor, perhaps did not have the time to do it, I will try to save you the trouble.

Mr. Ross says the hen's nest has absolutely no ventilation when she is sitting on the eggs. This is a very great mistake. It would be absolutely impossible for it to be the case, as the nest below the eggs is never quite as warm as the hen, the space covered by the hen being much warmer than the surrounding air, and as it is impossible to construct a dwelling house by the ordinary methods which would prevent any air from entering from the outside, so would it be impossible for a hen to sit so closely as to prevent any interchange of air between the nest and the outer air. The difference in temperature will compel this to take place, even should the hen do all in her power to prevent it, but she does not, for she frequently rises up on her feet; will often do it when she is watched, and much more frequently when she is not watched. Each time that the hen rises a total change of air in the nest takes place. The warm air all escapes upward, and the nest is filled with the colder air from around it, and while she is sitting still the interchange is constantly, although more slowly, taking place.

Third, The eggs do become smooth and glassy under the hen, but to say that they are coated over with a cement from the body of the hen, which is perfectly air and moisture proof, is stretching the imagination to a very large extent. The fact is that no egg ever was, or ever will be hatched which is so sealed up. They will not hatch if sealed in a small, clean glass vessel and placed in an incubator. A record of some experiments to that effect can be found in a back number of the POULTRY KEEPER. The eggs become smooth and glassy, and the shells soften more under the hen than in the incubator, and Mr. Ross perhaps gives us the proper reason, as I do not pretend to know just why it is so, but it is enough for me to know that such is the fact.

Fourth, The statement that very little moisture can be evaporated from the egg under the hen is not borne out by the facts, as eggs which hatch well under hens nearly always lose from one-fourth to one-third of an ounce in weight, and this loss is caused entirely by the evaporation of water from the egg through the pores of the shell, principally the large end. Eggs placed under hens float freely in warm water at the end of two weeks, which shows that they have become much lighter, as when fresh an egg always sinks in water.

On one point Mr. Ross fails to make himself clearly understood. He says that very little evaporation can take place from the egg, but that nature has wisely provided a means of escape. Just what he means I do not know, but the fact remains that an egg kept in air so moist that no evaporation can take place never hatches, as I have tried to do that thousands of times and failed every time.

Fifth, The next point is the breathing of the chick before it breaks the shell. That assertion makes me smile. We are now come to the interesting point of this article, and one on which I desire all the light to be thrown which can possibly be done by any person, and I am always willing to tell all I know on the subject. Mr. Ross says the chick never breathes until it breaks the shell. Now, he surely ought to have known better than to make such an assertion as that. He merely jumped to a conclusion, like a woman, only that a woman nearly always hits the mark while Mr. Ross missed the target entirely. All chicks which get out of the shell all right begin to breathe through the lungs twenty-four hours or more before they break the shell. This fact can be ascertained by any persons for themselves, and by very simple means. The largest number of chicks which get out of the shell all right have the head in the vacant part of the shell, which is most always at the large end. That is, they break through the membrane, and get their beak in the vacant space, and a healthy chick which gets the head in that position will always get out alive unless heated so hot that he is killed while trying, but, unfortunately, many chicks get the head in the wrong part of the shell, and when they want to get the lungs filled with air, and gather strength to break the shell, they find that in place of being able to get their beak in the vacant part of the shell they are surrounded either with water, or with the mass of sticky albumen that is always to be found in each egg when the chick is coming out, and although the chick, up to that point, may be perfect in every respect, it chokes and *dies in the shell*, simply because it cannot get a chance to breathe a few hours before it breaks the shell. They often make desperate efforts and break the shell too soon. This can be told because the spot will be bloody, and they sometimes get out, but are much more likely to die in the shell.

Sixth, Mr. Ross makes the very pertinent inquiry as to how long the air in the shell would last if the chick was to breathe it over. We shall try to make that point clear, as on that very point hinges the one great cause of chicks dying in the shell.

The air in the large end of the egg is claimed by some to consist more largely of oxygen than of ordinary air. Whether such is the fact or not I do not pretend to know, but it is not necessary that it should be so, for the reason which we have stated before in regard to the nest. The egg with the live chick in the incubator is several degrees hotter than the air in the egg chamber of the incubator (or if not it is because the incubator is too hot). This difference in temperature between the egg and the outer air causes a constant interchange of air to be taking place between the air in the egg and the outer air in the incubator, or under the hen, as the case may be. This keeps up the supply of oxygen in the air, but when the chick first begins to breathe through the lungs it is not instantly made dependent on that method of oxygenizing the blood. The change takes place gradually, seldom in less than twenty-four hours, when the chick begins to breathe through the lungs. This gradually begins to act on the blood, but the method used while the chick was still growing, viz., oxygenizing the blood through the pores of the shell, is still going on, the change taking place gradually but surely. The blood is slowly leaving the network of veins which cover the entire interior of the shell, and gathering into the body of the chick, the veins and arteries on the lining of the shell gradually drying up, and when the change has been so far effected that the chick begins to feel the want of air he begins to chirp and struggle, makes a desperate effort and cracks the shell. This gives him all the air he wants, and, if the incubator is at the proper heat the chick takes it easy for quite awhile and, when the blood has almost all been absorbed from the network of veins and arteries surrounding the chick on the inside of the shell, the time has come that he wants out of his prison. Then he begins to turn around in the shell, and crack it as he goes, until the entire top will break off. It is usually during these turnings that the yelk is absorbed, as the yelk sac is, or should be, entirely absorbed, just as the chick gets out. A person who watches them come out will often notice that the last bit of the sac is just disappearing as the chick kicks himself clear of the shell, and very often, if the heat has been a little low, the sac will only be partly absorbed, and also such is the case with weakly chicks.

That the chick does breathe in the shell before it is broken can readily be proven to the satisfaction of any one who will take the trouble, for all that is needed is a good egg tester, and nothing is as good as a dark room and a single hole to admit sunlight. If the eggs are examined in astrong light at such a time the action of the lungs can be plainly observed through the shell. We have shown it to thousands, and looked at is more times than we could tell, and, in addition to this, if the egg is held to the ear the breathing can be very plainly heard. I have often seen children hold the eggs to the egg and say, "listen, I can hear it breathe," and so can any person who has good ears.

The vital point of all this is that there are two great causes of chicks being dead in the shell, and right here, one is that they choke, as before stated, because they are wrongly placed in the shell, and the other is that they are killed by keeping the incubator too hot just when they are struggling to get out. They die when perfect; but while it is of the utmost importance that they should not be overheated at this time, it is of equal importance to not let the machine be too cold, as a poor hatch is sure to result in either case. The chicks can heat themselves up to 105 degrees, or even 106 degrees, and get out all right, provided the heat of the incubator itself does not exceed 102 degrees; and 101 degrees or 102 degrees should be the heat of the egg chamber when the chicks are coming out. The great trouble is that so many operators cannot distinguish between the two. There are but few operators who have not noticed how quickly the heat of the egg chamber falls when a large lot of chicks are removed. This will readily show that the heat of the egg chamber is much lower than the heat of the chicks, but the mistake must not be made that if the incubators are kept cool enough the chicks could never get too hot, because a large number of chicks could easily heat the egg chamber too hot for those that are still to come out. Care should be used that a thermometer among the live chicks should never exceed 106 degrees, and even that will be too much. If a little more attention was given to these points there would be fewer complaints about perfect chicks being dead in the shell.

In our December, 1886, and January, 1887, issues (which we can supply), Mr. Campbell treated the subject of testing eggs with skill, and his articles contained many valuable hints in regard to chicks dying in the shells. In the above, he lays before the readers that which they may demonstrate for themselves if they so prefer.

BURNING SULPHUR.

When burning sulphur in the hen-house, always stop the cracks and make the house as close as possible. Get a brick as hot as you can, put it quickly on the hen-house floor, pour about half a pound of sulphur on it, shut the door, and keep the house closed tightly for three or four hours, and all insects will be destroyed.

KEEPING EGGS FOR SITTING PURPOSES.

How long will eggs keep if you desire to use them for batching? We tried an experiment in that direction. We kept the eggs in a place where they were as cool as possible, without freezing, the temperature not going below forty degrees nor above sixty degrees, and we turned them half around three times a week. Eggs that were kept in this manner for six weeks hatched as well as those that were fresh, and the chicks were strong and active.

CROWDING AT NIGHT.

During this season the hens will require plenty of room on the roost, as crowding causes much suffering among them on very warm nights. If the hens are fat, and crowded on the roost, it will not be unusual to find one or two dead on the ground in the morning, due to apoplexy. Make all the roosts of the same height, or the hens will all endeavor to get on the highest roost, and allow enough roost so that each hen will have a foot of room. It is best, however, not to put too many hens together.

SLOW GROWTH IN SUMMER.

Most farmers will state that young fowls do not grow very fast in the summer season compared with the spring, and for that reason they do not hatch many chicks after April. The cause is usually lice, especially where a large number of chicks are kept in the same quarters. Having a greater supply of green food, as well as variety, the chickens should make more rapid growth in summer than in winter, and they will do so if kept entirely clear of both the red mites and the large gray body lice which infest the heads and necks of fowls of all ages.

GEESE AND PONDS.

What a flock of geese should have is a pond, which should be near a plot of grass. If so situated that the flock can get plenty of grass, with minnows and insects in the water and on the banks of the pond, no food at all need be given at this season. But there is one thing often overlooked by those who breed geese, and that is a shelter at night. Although geese are fond of the water, yet at night they prefer a dry place upon which to rest as well as protection against the rains at night. Wet weather is not conducive to the health of aquatic fowls.

FINENESS OF BONE.

Fine bone indicates fine grain and excellent quality to the meat. All the best table fowls have fine bone, but a pair of strong, heavy legs under a bird indicates strength and hardiness. To breed for the table the hens may be rather stout but the cock should always be fine in the bone. This is noticeable in the Game and Dorking, both of which produce a small proportion of offal to the carcass compared with many other breeds. We do not suggest that birds be bred down too fine, but, if selections are to be made, those that are coarse-boned and clumsy should be discarded in preference to the finer-boned.

DUCKS FOR MARKET.

As we wish to keep our readers posted, we will state that about the first week in June is the time young ducks usually bring the best prices. They should weigh about six pounds per pair, and if fat and in good condition, may bring as high as thirty cents per pound, but the market does not remain up longer than a week, as prices rapidly decline. Matured ducks are also in demand, but they do not bring very high prices. Young ducks are best fatted for market by being confined in a small yard, with good warm quarters, and fed plenty of mashed potatoes and grass, the potatoes thickened with a mixture of two parts of corn-meal and one part ground oats. No water will be required except that which should be given them for drinking purposes.

GET THEM FAT.

Put the extra hens in a yard, and make them fat before sending to market. There is quite an advantage in so doing, as ten days is long enough in which to fatten them, the cost of food will not exceed five cents, and they will bring a higher price. A hen that weighs six pounds may be made to reach seven or seven and one-half pounds, and if she is very poor will make greater gain. At ten cents per pound, the extra pound gained more than pays for the food, but this is not all, as a nice fat hen will bring two or three cents per pound more than she would if not in good condition, as only the best stock bring the highest prices. It always pays to pen up the hens and fatten them before selling.

SIGNS OF HEALTH.

A red comb and an active, restless disposition indicate a fowl that is in perfect health and that will give a good account of itself. The slow, fat, sleepy-looking hens, if not in poor health, are at least not in good condition. A hen that lays a large number of eggs cannot afford to be sleepy or droopy. Nature prompts her to seek for a variety of food. Her needs are urgent and she has no time to fool away sitting on the roost or lazily lounging in a corner. The activity not only promotes her health, but keeps her in possession of a good appetite. She works off the surplus fat and converts the nitrogen and phosphates into eggs, where she stores up all the elements necessary to bring forth chicks.

PEACH TREES IN POULTRY YARDS.

While we have frequently alluded to the advantages of fruit trees in the poultry yards, yet we select the peach in preference because it will bear fruit in three or four years from the time of growth from seed, and also because it is a tree that delights in being cultivated, or rather in having the surface of the ground frequently turned over, thus fertilizing it and keeping down the grass and weeds at the same time, while the hens will keep the borers away. Borers and yellows will not be great obstacles to a peach tree in a poultry yard. The main object, however, is to compel cultivation of the tree, as by so doing the yards are rendered clean and healthful for occupancy by the fowls, which is a very important matter.

CHOICE MARKET STOCK.

It is greatly to the interest of the farmer, the commission merchant and the customer, to have only choice fowls reach the market, and the farmer will gain more than any other person. There is a difference of five cents a pound on some classes of poultry; "choice extra" and "ordinary" being wide apart. Now, will it pay to fatten a fowl? If a six-pound fowl can be increased to eight pounds, there will be a clear gain of two pounds, and the original six pounds will have increased in value thirty cents extra in price, by reason of the two pounds added. It is only necessary to put a lot of fowls in a yard together and feed them on a variety of food for two weeks, provided corn is given liberally, to change them from inferior to choice, and the gain in weight and price will be much greater than the corresponding cost of the food.

WHAT AN INCUBATOR SHOULD DO.

We are often asked how many chicks will an incubator of a given capacity hatch? Such a question cannot be intelligently answered, any more than the inquiry, How many chicks should a hen hatch? All depends on the eggs. A hen has a better opportunity to bring off a full brood, for she uses but few eggs, and some kind of selection of the eggs can be made; but those who use incubators are often compelled to go out and buy up the eggs, and every reader knows what that means, for in order to procure several hundred eggs, many neighbors may be visited, of whom some are careless and some very attentive to their flocks; in many yards the hens being too fat, while immature pullets, frosted-comb males, impotent males, chilled eggs and other drawbacks will be met, which render it not an easy matter to secure a good hatch.

SUMMER FEEDING.

So accustomed are those who keep poultry, to the feeding of grain, that some cannot comprehend how fowls can be fed in any other manner. It is much easier to feed grain than anything else, it is true, but is it economical to do so, as not only the cost of the food is to be considered but the product to be derived must also be taken into account. During the warm days of summer but very little food is required for bodily warmth, and the economical poultryman should make it a point to save the food that would otherwise be required but for the season, and in feeding heavy rations of grain he really does more harm than good. A mess of potatoes, with chopped grass (should the birds be confined) and about an ounce of meat per day to each hen, will do more in the way of egg production than all the grain that can be supplied, while the health of the fowls will be promoted by the lighter diet. If grain is given at all it should be at night only, and should consist of a mixture of wheat, corn and oats.

HEN MANURE.

It is safe to estimate that the manure from hens is worth at least one-half the cost of the food, if properly kept and judiciously applied. We know a strawberry grower who states that the manure from forty hens doubled his crop on one acre, compared with another acre not so treated. His method was to scatter the manure plentifully over the plants in January, before the spring growth commenced. In this way the rains carried the manure to the roots. A calculation will show that the value of the manure was greater than may be supposed. He estimates that he gained 1,000 quarts of berries extra, which gave him a profit of three cents per quart, with prices very low. This shows, that from the forty hens, he got enough manure to produce $30 worth of strawberries extra, after paying expenses of picking, etc., which of course represents the value of the manure at seventy-five cents per hen. The manure is therefore a very important item, and deserves to be included in the estimates of the poultry account, as in some cases it may pay for nearly the whole of the food consumed.

EGGS IN SUMMER.

There are a great many causes for not getting eggs in summer, one of them being that the hens are usually moulting. If the hens have a grass plot and good forage, they usually lay well at this season, if they are not moulting, but where they are confined it frequently occurs that there are fewer eggs in summer from the hens than in winter. This is not difficult to explain. In winter the food may consist largely of grain and other concentrated food, as the cold renders the fowl liable to loss of heat and fat, but in summer the bodily wants of the hen are lessened, though many persons do not give the difference in the seasons any consideration at all. In summer, the more bulky food (such as cut grass) that is fed, the better, provided that once a day a proportion of chopped meat and ground bone is fed. Only a small amount of grain should be allowed, which should be scattered in litter, so as to compel the hens to scratch for it. If grass is fed in the morning, with mashed potatoes and meat at night, the hens will need no grain at all.

ECONOMY IN ROOM.

Endeavoring to keep as many hens as possible under one roof, has been the cause of many failures. The greater the space allowed in the hen house, the more comfortable the hens, and any attempt to crowd them only adds to the expense without a corresponding increase in the receipts. This is well known to our readers, who can call to recollection that they have known instances where two or three hens laid regularly, while in other yards, flocks of twenty or thirty hens were very unproductive. There is no economy in endeavoring to keep twenty hens where only room can be had for ten. True, more hens are together, but the number is of no consequence if they do not lay. Economy consists in so regulating the flock as to have it productive. Better have only four or five hens that lay every day, than dozens that do nothing but eat. Give enough room on the roosts, have several troughs and an ample water fountain, so that the strong hens cannot domineer over the weaker ones. If glass is used as a covering in winter, let the space under it be ample, and give plenty of room for all purposes.

THE POULTRY HOUSE.

In building a poultry-house, aim to give the birds as much space on the floor as possible. More room can be secured from a square house than from any other. If twenty-five hens are kept together, the number will be as large as can be permitted and it is better to use two cocks, penning one with the hens for three days, and then cooping him and using the other for three days. By such a plan, quarreling will be avoided. There should be a window on the side facing the sun in the morning, and the house should front south or southeast. A house 12x12 feet is about the proper size for twenty-five hens. The roost should be at the rear, over a board-the board being for the purpose of catching the droppings. Under the board should be the nests, which may be made of ordinary soap or candle boxes, so as to be removed easily for the purpose of being cleaned. Once a week the poultry house should be sprinkled, from a watering-pot, with a mixture of one quart of kerosene oil and one gallon strong soap suds. The roof should be tight, and the walls should be built so as to allow no cracks or crevices or draughts of air to come in on the birds.

FEEDING EGGS TO FOWLS AND CHICKS.

Should eggs that are stale, or which have been tested out of an incubator, be fed to hens or chicks? This is a question that has not been discussed very frequently, and we wish to give a few points in regard to such food.

For many years the recommendation was to feed hard-boiled eggs to chicks. When the incubators came into general use the feeding of eggs was decided to be detrimental. The fact is that both claimants are correct.

In the first case, eggs were only fed sparingly because they were not plentiful. In the second case, eggs were too plentiful, and the chicks had more hard-boiled stale eggs than of anything else, the result being that it caused bowel disease and other difficulties, especially with very young chicks.

It is a loss not to utilize the infertile eggs, and they can be put to good use if it is done properly. The way to do so is to give the chicks one feed a day of the eggs. Mix the eggs well with a little corn meal, or chop them up fine. An excellent mode is to break one egg into half a pint of ground grain, such as sifted ground oats, and feed it without cooking, giving the chicks all that they will eat, but avoid all eggs that appear as if partly decayed.

Even hard-boiled eggs may be used also, but it should be done by way of variety, in place of the mixture, every other day giving the chicks a full meal. The point is not to feed them too much. Once a day is often enough.

For fowls the eggs are excellent. Give an egg or two to each hen, once a day. Eggs will make eggs. We once heard of a breeder who bought eggs layed by common hens, at fifteen cents a dozen, for his pure-bred fowls, the eggs from which he sold at two dollars a dozen. He was simply sifting the prices from fifteen cents to two dollars.

When eggs are given to fowls, reduce the other feed. The same rule applies to meat and bone. The difficulty is that too much expense may be incurred.

Eggs are rather expensive to use as food. It is not an easy matter to get them. There are, however, times when eggs are plentiful, especially when some have been tested out of the incubator. Keep them in a cool place, first immersing them in cold water to remove the heat. They may also be boiled until they are hard, and then stored away. They will keep well enough until they are all used.

CABBAGES FOR POULTRY.

If possible, grow a small crop of cabbages for the use of poultry in winter. Only 100 heads will last a flock of twenty fowls for four months, and if the heads are stored in a cellar and packed in dry sand, they can be very easily handled in winter, and will be safe from frost.

HOW THE POULTRY INDUSTRY IS RECOGNIZED.

Smith said he was going to attend the great Agricultural, Mechanical and Stock Exhibition of X county—wouldn't miss it for money, and he wanted me to accompany him. I asked him what he was going to exhibit. "Exhibit!" he almost howled. "Why don't you know I've entered Flying Catastrophe in the 'free for all?' Where have ye been at?" Blessed if I knew anything about it. I had noticed him and his slab-sided bay filly going up the road at a great pace every morning for some time past, but I just supposed he was airing himself, or strengthening the beast's legs and wind for next season's ploughing. I had no idea that she was a Flying anything.

"What's the premium on flying horseflesh this year?" I asked.

"$250 to the winner, $100 to the second. $50 to the third in my class! Haint ye got a premium list?" No, I hadn't.

Then it suddenly occurred to me that I might enter a few pedigreed fowls for a premium. I thought that as the poultry industry in the United States amounts to over $600,000,000 a year, the Agricultural Society of X county would certainly recognize the high bred fowl in a becoming manner. So I immediately went down to Brother Smith's house and borrowed his premium list for the purpose of posting myself on rules, methods, etc., etc.

The pamphlet was nicely got up, and highly decorated with advertisements and engravings of pianos, and pants, and horses, and hay rakes, etc., etc. Scattered along here and there was the list of premiums offered for animals, fowls and products. Horses that could travel as fast as a good bicycle were rated so high that I felt sad because I didn't possess a dozen or so—$250 for one that could trot a mile the quickest, the same to one that could gallop a mile faster than any other on the grounds, and $150 for the liveliest pacer.

Then I rolled over several pages of advertisements and found what I was looking for—"The Poultry Department." At the head was "Grand Sweepstakes for Best and Largest Display of Fowls; Not less than Five Varieties, $3." I at once decided that here was a terrible typographical error that had been passed unnoticed. The printer had, I felt sure, left out a cipher. That the Grand Sweepstakes was $30 instead of $3 must be evident to any person who knew anything at all about the vastness and importance of the poultry industry. $3! The idea! "The printer who would make such a glaring error as this," said I to myself, "ought to be gently led behind the wood pile and thoroughly shot!"

Then I read on. "For best trio of Light Brahmas, $1." Here was another error. Another cipher left out. Evidently the typo was boozy, or somebody had tampered with the form. Why, the old cock in my backyard cost *six times* that sum!

But I read on. "For best trio of Plymouth Rocks, $1." Then the truth burst upon me like the boiler of a saw mill.

Best trio of Plymouth Rocks $1!!

Free for all, mile and repeat, for such wild-eyed, skeleton-framed, grass-hopper-built horses as Smith's, $250!!!

And this in the premium list of "A Society Organized to Promote the Interests of Agriculture," located in the midst of a magnificent farming country populated by rich and progressive husbandmen, ten of whom sold enough poultry products last year to buy half a dozen such horses as Smith's! One dollar premium for three breeds representing a national industry exceeding $600,000,000, and $250 for a spindle shanked horse that represented merely a lot of cranks, gamblers and suckers! Verily, I am constrained to exclaim with the Quaker, when he buried a neighbor's dog in his bean field by the light of the sad-eyed moon, "Mysteriously occult are many of the ways in which agriculture is promoted.—*Fred Grundy, in Rural New Yorker.*

PLUCKING GEESE.

I consider the gathering and saving of their feathers the largest part of the profit in raising geese. I like my geese to hatch out about the last of April. At that time I pick the ganders of the flock, the geese having lined their nests with feathers they are not in condition to be plucked. About the first of June the ganders are full feathered again and the geese are ready too, as you will begin to fine loose feathers where they stay over night. Then in about seven weeks the goslings are ready to be plucked with the old ones. Don't take the feathers off too bare, as the sun is hot at this season. By the last of September you will get a fine lot of good feathers again. If you keep the geese for the holiday market they are again ready in early November, but if the nights are cold drive them up and give them shelter. They will soon feather at this time of year and at killing time you will get the finest crop of the year.

Fasten them up in a stable having plenty of clean straw under them for half a day before you begin to pluck the feathers, then they will be dry and clean. Take a narrow strip of muslin, tie their feet together, lay them on their backs, tuck their wings under them, let an assistant take hold of the head and as soon as they are done struggling take hold of the feathers and with a quick jerk towards the head the feathers come very easily. Do not disturb the ones under the wings along the thigh, as this tuft holds up the wing and if plucked the wings will droop.—*Cor. Farm Journal.*

HOW TO SELECT AND FEED.

The season is now at hand when the breeding stock show should be selected and mated. Careful and judicious selection will enable the poultry raiser to build up and improve the utility qualities of his poultry. Haphazard mating has a tendency to greatly reduce the profitable qualities of fowls. In fact, it is necessary to select from the best to retain the prestige the flock may have already established in utility points. Whether the flock be composed of what are commonly called mongrels or commons, or of thoroughbreds, to maintain the degree of excellence they may possess it is always necessary each season to select the best as breeders. Which are the best? Every poultry raiser should have reasons for concluding that some of his fowls are better than others. The following reasons are among the many an observant poultry raiser would give for selecting his stock for breeders: There are certain pullets in the flock that grew more rapidly than others of the same brood and commenced laying earlier. There are some that he knows to a certainty were hatched from hens that have proved by their record of egg production to be superior specimens. Then there are pullets that are hatched from the extra large eggs a certain hen habitually lays; pullets known to be from the eggs of extra large hens, etc. All these desirable specimens the wise poultry breeder has had marked a long time, not only in his minds eye, but in fact.

Many regular poultrymen, when they set their hens, know just what hen each egg is from, and as soon as the chicks are hatched they are marked and a record made in a little book kept for the purpose. A small punch is used for marking the chickens. A hole, for instance, is punched in the web of the foot between the outer and inner toe of the left leg. All thus marked the record would show were hatched on a certain date and were bred from a certain source. If more than one yard is kept, the record would determine from which yard and sire, etc. Different hatches can by this method be readily kept recorded, and by simply changing the place of marking to the right leg and between inner toes, by marking the web of both feet, two holes in the web of one foot, etc., the record may be kept for a large flock. These small punches, made for the purpose, leave but a small hole in the foot of the chicks and do not annoy or injure in the least degree. When the chicks have grown up an inspection of the feet and the record book enables the owner to select just such birds as he wishes to mate for each season's breeding. Breeding poultry is the same as raising sheep or cattle—judicious selection each season will accomplish great results in improving the flocks. Without observing such methods the flock deteriorates, and will in time become unprofitable. The first step toward perpetuating the good qualities of a flock is a proper selection for breeders. As soon as the selection is made the birds should be given quarters by themselves. It is best to select the breeding stock a little in advance of the time eggs are desired for incubation. About two weeks after they are mated will be time enough to commence saving eggs. The breeders should be fed with the object of producing eggs that will hatch strong, vigorous chickens, rather than a great number of eggs. Too liberal feeding will induce too much fat, and fat hens are apt to yield too many infertile eggs. Eggs from fat hens that do hatch are apt to produce inferior chickens, always lacking in sprightliness and seldom making desirable specimens. Keep the breeding hens in good condition, but not fat. Give a liberal and varied diet, avoiding foods that are of a fattening nature. Let the grain food be wheat, oats, buckwheat and an occasional feed of corn. Always feed the grain in the afternoon. The feed for morning may be hominy chop or cornmeal, with an equal quantity of wheat bran, mixed with scalding water to a crumbly consistency. Oats and buckwheat boiled together for three hours the previous evening, set on the back of the stove, and enough bran added to it in the morning to make it a dry, crumbly mixture, makes an excellent food for egg production.—*Baltimore Sun.*

SALT, PEPPER AND GINGER.

A writer for *Homestead* says salt, pepper and ginger, especially at this season of the year, are very useful and beneficial to poultry, if fed in a proper manner. I once heard of a man who gave his dozen hens a heaping teaspoonful of cayenne pepper every morning, and then wondered why they didn't lay. Really the greater wonder was, that they didn't burn up and go off in fire and smoke. Such a large amount is out of all reason. It would be abundantly sufficient for the breakfast of fifty hens, and then should only be given two or three times a week. In this way a little of these firey substances (pepper and ginger) promote digestion, tone up the system, and help to keep away from poultry those chills and sudden colds and coughs which are so apt to attack fowls this time of the year, as the result of exposure to draughts and dampness. Salt seems to be universally craved by all species of animal life, and undoubtedly it subserves a number of important uses in the animal economy. Give a teaspoonful of salt every morning in a mash for twenty-five hens.

CRITICS of the comparison method should be answered in no other manner than to *compare* their work at scoring.

GETTING RICH ON POULTRY.

"Do not attempt to get rich by raising 200 to 300 chickens in one place." A writer for an exchange thinks this injunction needs a little qualifying. He says: "If the place contains only about one-half acre of ground the number of chickens would be too large, unless the utmost care were taken in regulating their food supply, and in keeping their quarters scrupulously clean. If you have fifteen acres of ground, you can raise 1,000 young chicks each year, and raise all their grain too. It will take 300 healthy hens to raise this number. An unorganized mob of 300 hens, wandering at will over a fifteen acre farm, is a nuisance, and will bring very little, if any profit to the owner. A fifteen acre poultry farm should be divided into two fields; one of five acres and one of ten acres. A tight fence of some kind should enclose the entire fifteen acres; tight enough at the bottom to prevent small chicks from going through, and high enough to prevent any of the medium weight breeds from flying over. If Leghorns or Games are raised, the fence will need to be higher. There need be but one division fence, which should be made so that it can be easily moved once every year. Fence off five acres at one side the first year as a run for the chickens. In this space there should be an enclosure 30x50 feet, placed in one corner, so that it need be fenced on two sides only. This fence should be made of wire netting and 2x2 stuff, the posts braced at the bottom, and not sunk into the ground so that it could be moved each year. In this small enclosure there should be three or four small houses not over 4x8 feet each, and five feet high at the eaves on the lower side. These should be used for sitting hens only. The boxes in which their nests are made should be loose boxes, which can be obtained at almost any grocery store. They should be set upon shelves, so that they can be easily taken down, burned out and coal-oiled after every hatching. There should be three other houses of similar size in the large enclosure for laying hens, and these should have roosts not over three or four feet high. High roosts are dangerous except for the light breeds. The heavier breeds often fracture their breast bones in flying down from the roosts, and injure themselves otherwise, often internally. The advantage in having small houses is that they can be moved every year, thus insuring good health among your poultry. Five acres of the remaining ten acres should be put in wheat, four acres in corn and one acre in sunflowers. Sunflower seed is excellent to make the hens lay and to keep both young and old poultry of all kinds in good health. With this arrangement no part of the fifteen acres is occupied but once in three years by the poultry. During the other two years it is plowed up for wheat or corn, the houses and division fences being moved each year. There is no trouble in hauling away manure, either, as it can be scattered over the five acres which the poultry are at the time occupying. It is a good idea also to have another movable division fence across the five acres occupied by the poultry, so that a part of it may be sowed at several intervals during the summer with oats, millet and rye, and then the fence moved so that there will be a constant supply of green food. In this way from 1,000 to 1,500 young chicks can be raised each year, and from 1,800 to 2,500 dozens of eggs produced on fifteen acres. The amount of capital invested need not be large, and the business is easily carried on by those who are not strong enough to endure very severe physical labor."—*Journal of Agriculture.*

MILLIONS OF EGGS.

New York City consumes between two and three million eggs daily. It is said that if the whole surface of the State of New York were covered with hens they could not lay enough eggs to supply New York City. New Jersey does not produce as many eggs as its citizens consume at home. Indiana is the largest egg-producing state in the country. The United States does not produce enough eggs to supply its people, and large quantities are yearly shipped into this country. Canada alone has annually shipped about $2,000,000 worth to this market. No danger of glutting the market.

The egg traffic in the United States is large, and the business is increasing. In New York City alone aggregate transactions amount to the value of eight millions of dollars annually. In Chicago, Cincinnati, Boston and other cities the trade is proportionally large, and the total sales of eggs in the States are estimated at sixty million dollars annually. It is reported that six million dozen of eggs are imported annually from Canada. Upwards of twenty thousand car-loads of live and dressed poultry are sent to New York annually, and 25,500,000 dozen of eggs (306,000,000) to the same market. According to what are deemed the best estimates, there are produced annually 9,000,000,000 eggs, or 750,000,000 dozen—a nice little item for consideration of those who call the egg, chicken and poultry business a small affair, fit only for women and children to engage in.

Eggs to the number of 9,059,212 dozens were imported into the United States during the nine months ending September 30, 1888, whereas 9,505,928 dozens were imported during the corresponding nine months of 1887. By far the larger proportion of these eggs came from Canada. Very few, if any, came from England, although the imports from Italy, Germany and France were at times large.

LEG WEAKNESS.

True leg weakness the kind that at first affects the legs only, is confined almost wholly to the large breeds and is caused by rapid growth, which increases the weight out of proportion to the strength of the legs. The tendency to this form of the disease may be lessened by feeding bone-forming food. The trouble usually begins when the chicks are between four and five months old.

The first symptom of leg weakness is a shaking or trembling of the legs when the chick stands or walks. Generally the appetite is good, even after the patient is unable to walk.

Treatment, to be effectual, should be commenced as soon as the first symptons of weakness is seen, for, after a chick once gets down upon his hocks, it is almost impossible to get him up again. The first thing to be looked after is the food. If the feed has been mostly corn meal, change to shorts and whole wheat, and give a raw egg daily to every two patients. Give milk to drink and give teaspoon of bone meal each day to each chick. Keep lime where it is easy of access.

For medicine, give half a teaspoon of Douglass mixture a day to each chick and twice a day give a half-grain pill of quinine. They should show signs of being better in a week; then give only one pill a day, and, as soon as shaking ceases, leave off the pill and the egg, but continue the bone meal three or four times a week. Let them have the Douglass mixture for three or four weeks longer. If a week of steady treatment does not produce improvement, it is not advisable to fuss with them any longer. Use the hatchet.

When leg weakness comes on half grown chicks of the small breeds, give pills and Douglass mixture as for the large breeds, till they brace up, then feed bone meal, lime and meat right along till carried to marketable age and condition, then market them. Do not keep for breeders.

While fowls are being treated for leg weakness, keep them by themselves, but not in a close coop—they need exercise. To prevent leg weakness, breed from healthy stock, and feed bone meal.

Leg weakness in old fowls is sometimes caused by too high feeding and too little exercise. The fowls get fat and heavy and cannot walk or stand steady. This form of weakness may sometimes be overcome by cutting down the feed and giving the Douglass mixture, bone meal, and making the fowls scratch. But it really pays better to kill at once and use for the table any fowls that begin to show leg weakness because of over feeding. When done then, they are perfectly wholesome.

Another form of leg weakness comes from injury to the hock joint, caused by jumping from high roosts. Any one knows how to prevent that. But if it occurs before the roosts are made low, put the injured fowl in a well littered coop, without perches, and give victuals and drink, and nature will do the rest, if cared for when first lamed.

Paralysis of the legs is different from other forms of leg weakness, and the best remedy is the hatchet.—*Farm, Field and Fireside.*

CARE IN KEEPING BREEDS.

The majority of farmers know so little about the pure breeds that they often labor under the mistake of supposing they have pure-bred cocks when in fact they have only mongrels. We recently inspected a flock where the owner took great pride in the possession of a fine Plymouth Rock rooster. We pointed out that the rooster had feathered legs, but that in most other respects he resembled a pure-bred Plymouth Rock. He simply stated that the feathered legs would not interfere with the usefulness of the bird. Just here we wish to ask the attention of the reader. In one respect it was true that the feathers on the legs of the rooster could in no manner injure him, but they denoted impurity, and the consequence is that next season there will be no uniformity in the chicks. If the male is not strictly well-bred no reliance can be placed on him as a breeder. He cannot transmit those qualities naturally expected from a pure-bred cock, and the result will be disgust at the experiment and a condemnation of pure-bred males for breeding purposes

MISTAKES AND OMISSIONS.

Mistakes are often made which, though apparently slight and insignificant, change a prospective profit to a loss, and mistakes are more easily made by the experienced sometimes than by others. It is the constant care and watchfulness that give the best results. The leaving of a ventilator open on a damp, drizzly night, for the draughts to blow down on the birds, may cause roup, while the failure to clean out the poultry-house may lead to the breaking out of cholera. The buying and bringing into the yard of a hen from a neighbor may stock the entire flock with lice, and failure to ship the surplus stock to market at the proper time may entail a loss of the difference of a few cents per pound, which, however, may amount to quite a sum for the whole. In nearly all cases of failure it has been the mistakes and omissions that have been the difficulty, and although every one should endeavor to learn how to succeed, yet it is more important to first learn where the mistakes are usually committed.

FOWLS FOR PROFIT.

There has been more money in hens for a year past than there ever was before in this country, and if the same prosperity would follow the business it would pay to go extensively into the raising of fowls and the keeping of hens, especially for their eggs.

The great trouble in making a success of keeping a large hennery is generally that they are kept too much confined, do not have a large enough run, do not have a proper house, and many times have not proper food and care, and the lack of any of these conditions is enough to make chances of failure.

First, then, a large run. This run can be set out to fruit trees and fowls will catch all the curculios and thus make good healthy fruit. This fruit should be sweet apples, pears, peaches and plums, and all the wind falls will be eaten by the fowls and all wormy fruit likewise. This run should be as large as can be afforded by existing conditions and if the fowls can do damage by trespassing, there should be a fence of wire and wooden slats around their run. This makes the most effectual fence for fowls.

The house should be built on the southern slope if possible and have a nice stone basement with a ground floor. Build as large as possible, as a 12x9 shanty is unfit entirely for the business. Have the house front toward the south, and have as much glass in as is convenient to let in the sun in the cold months. Have large, shallow boxes filled with road dust, and renew it often. This is a vital point and cannot be omitted with success. Ground bone and lime and plenty of gravel should be convenient to them at all times.

If possible there should be running water in their yard. A variety of food should be given them if you wish for plenty of eggs. The hen-house should be fumigated twice a year and by thus doing the lice can be held in check.

As there are a great variety of fowls, and as all breeders lay claim for each that they alone are the superior breed of fowls, I shall not recommend any particular variety, but will say that as far as my experience goes, it depends to a greater extent on the care given them than on the variety of fowls which you have. Almost any kind of fowl will do to start on, unless you are going into the breeding business.

If you should have a nice fish pond it would be very nice for ducks and geese. Turkeys are raised quite extensively in my locality, many farmers having thirty or forty, which, at seventy-five or one dollar per head, amount to quite a nice sum. Turkeys running at large are quite a nuisance in a neighborhood, and should be restricted within bounds of the owner.

That there is money in early chickens and Christmas fowls and eggs is quite certain, but like most other kinds of business it requires to be well studied up and advantage taken of every wrinkle, else failure will be written all over the hen-house and on the fence and all about. Study the business closely and be vigilant, and there is certainly room for success, at the present time at least.—*Albert H. Rhodes, in the Witness*

RARE VARIETIES OF BANTAMS.

Fly Fishers are an English variety with a slaty blue plumage like the Andalusian. The hackle feathers were used in making artificial flies for fishing, hence the name. They are probably a close relation to the Cuckoo Bantam.

The Silk Bantam is called a separate variety by some, but much resembles the Silkies, which are often no larger than a bantam. Their plumage is very fine and much like silk.

The Partridge Bantam is a small edition of the Golden Spangled Hamburg, which it resembles in all points but size, having the rose comb, blue legs and color and markings.

Frizzled Bantams are another oddity, having recurved plumage. They are nothing but dwarf specimens of the Frizzled fowls, and are found only in England.

There are several other varieties of bantams in the process of development, and it is only a question of time, perseverance and skillful breeding when we shall have a bantam or dwarf of every standard breed and variety. For bantams are really nothing but dwarfs, and early hatching and heavy feeding will more than double their size in two generations. Late hatching and scant feeding are the true secrets of keeping them small. Crossing is resorted to to get a bantam from the larger breeds like the Brahma.—*Farm and Home.*

FROZEN EGGS.

In the winter season quantities of eggs are frozen, and it is generally considered that such eggs are worth but little, or, to say the least, are much injured for cooking purposes. This, however, is not strictly true, for if properly treated they are but little injured. Instead of (as was the custom) putting them into cold water to take out the frost and waiting several hours for the thawing to take place, and then finding the yolks in such a solid state that they can be used with no satisfaction in cooking, try the following method: Place them in boiling water and leave them there from five to twenty minutes, according to the amount of frost in them, when, upon their being opened, the yolks will be found in such a state that they can be used for almost any culinary purpose.—*Poultry World.*

TO PREPARE FEATHERS FOR USE.

In every farmer's family, or wherever poultry is kept, it is of consequence to save the feathers of all the fowls for stuffing pillows, sofa cushions and the like, even if it is not deemed worth while to sell them. Of course, geese and duck feathers being much more valuable than and others, will always be perserved with care; but downy feathers of hens and turkeys serve a very good purpose, and unless you wish to make dusters of the tail and wing feathers, the soft, feathery portions of these may be stripped off the quill and added to the rest. Unless your flock is large it will take some time to secure enough feathers to stuff even a cushion; and as they are gathered from time to time, they must be put into whole cotton bags, tied closely so that no moth millers can enter, and placed for a short time in a warm oven, to dry thoroughly. If you sometimes, for family use, and for speed and convenience, *scald* your hens before picking, the feathers can be dried in a tin pan, in a moderately warm stove oven, and added to the rest. Be sure that no bits of skin or flesh adhere to the feathers, as it gives an unpleasant odor, which is with difficulty removed. Feathers thus saved and prepared, answer very well for under-pillows or bolsters, and are quite nice enough for chair and sofa cushions.

An ingenious person can manufacture, for home use, feather dusters fully equal to those that are hawked about the streets, in shape or size resembling nothing so much as the huge bridal favors (or nose-gays), which English people burden themselves with, and which our own people are aping largely. For dusters, look among the cast-offs in the attic for old parasol handles that are carved, polished, inlaid and what not. Remove them from the useless skeletons, drive a short nail through the brush end and tie to it a strong linen twine, with one end eight inches and the other about two yards long; arrange a row of turkey tail and soft wing feathers around the stick and wind them close with the long string, so proceed, finishing with the short, downy feathers. Then have ready some melted resin, with which to cover the string (which should be tied to the short end securely), and over the quill part of all the feathers. A sheath of colored kid or broadcloth should be fastened over the ends of the feathers, and you have thus an ornamental and useful article at little or no cost.—*Poultry World.*

A WORD TO FARMERS.

What looks nicer around a farm barnyard than a flock of thoroughbred chickens? Why is it that we find so few that keep nice birds when they can be so easily procured and kept? In the first place get good breeding stock, and, second, see where Biddie is going to live. In the tree tops? No, she must have a good warm home and good food, if she is kept for laying qualities and profit. The man who expects to keep chickens and will not procure pure stock, saves a few dollars now, but loses them before the year is out. It is an extravagant kind of economy to keep scrubs. Really, I do not see how one can afford it, yet they do for a while, and then cease, not forgetting to claim that there is no money in poultry raising. Let every one take some good poultry paper. Wake up, sleepy ones, read what your neighbors do; see what his Silver Wyandottes are making yearly. What makes them lay such nice baskets of fresh eggs all winter? See how many nice birds he has for sale. See if you can buy a few eggs or young stock that will profit you. A good poultry fancier is never idle if he wants to secure the best results. In the first place find out what it will cost to raise a flock of good chickens before you figure on a profit. Good birds and good care are essential if success is desired. Strive constantly to improve your stock. Do not breed too many kinds. Take one good breed and stand by it, and it will stand by you. To persons contemplating the purchase of stock, we would advise an early selection, as birds can be bought much cheaper now than after the fanciers have cared for and fed them all winter. Now is the time to purchase stock, and in the business columns of this paper, you will find that.—*Mrs. Ed. Chapman, Nevada, Iowa.*

LIVER DISEASE.

The great development of this complaint during recent years is of very serious import to poultry keepers, and of high-class poultry there are comparatively few unaffected by it, says Stephen Beale in *Country Gentleman.* It is due, when not hereditary, to over-rich foods, to bad water or to foul soil. It takes several different forms, but the external symptoms in nearly all cases are the same, so that it is difficult to determine them until after death. There is a moping about on the part of the birds, general lassitude, an uncertain appetite and a yellowish hue on the face, comb and wattles. The treatment must be eradicative, and the food of the of the plainest nature, but at the same time nourishing. For medicine, give an aperient twice a week, and doses of homœopathic tincture of podophyllum twice a day. It is to be noted that all rich food must be carefully avoided, and the use of Indian corn has been most injurious in spreading disease. When neglected, it develops into active inflammation of the liver, for which there is no cure.

EARLY PULLETS.

There is great advantage gained in hatching the pullet (for producing eggs next winter), early in the season, and there is a greater advantage in having the right kind of pullets after they are hatched. If the eggs used for hatching the pullets are procured from any source wherever they may be obtained the pullets will not be uniform and they will not begin to lay at the same time. Much disappointment results because of the difference in size, period of maturity, and hardiness of the individual members of a flock, and there will be a saving of time by hatching pullets that are as nearly alike in all respects as possible.

When a pure-bred male is mated with a mixed lot of hens the chicks are somewhat uniform, as the male transmits his characteristics very strongly, but if the male is himself cross-bred the chicks will follow the hens in color, and if the flock is composed of hens that vary greatly in color, size, and hardiness the chicks will be the same, and there will be no improvement. While it will pay to use pure-bred males and females, yet something can be accomplished with common fowls if the male only is pure. There should be no doubts on the purity of the male, however, and it will not do to procure one from a neighbor who is not familiar with the breed desired, but he should be procured from a breeder who makes a specialty of the breed.

Select the hens and mate them with the male at least a month before using the eggs for hatching. A shorter time will answer, but it is better to begin early. When the chicks are hatched, and large enough for market, sell all of the young males, as well as any of the pullets that are slow in growth, or that are behind the others. Retain only the strongest and most active pullets, and push them forward in growth rapidly. Do not keep too many. That is where some make a mistake. They crowd their poultry houses, retard the growth of the pullets, and then are compelled to reduce the stock later on, when it is too late to derive benefit by so doing. Pullets hatched before April will lay in October or November.—*Mirror.*

AMATEURS!

Attend the poultry shows which have come up so rapidly in the last few years, that you can hardly fail to find a good one within a short distance of your home.

Remember that at these exhibitions you will see the different types of our domestic poultry in their best condition and highest stage of development, and have an opportunity to compare the living specimens with the ideas you had previously formed of them. You have, perchance, purchased a "Standard," and acquired by reading, much theoretical knowledge which requires but the addition of a practical acquaintance to round it out to a thorough understanding. Poultry-fanciers are the most enthusiastic of men in their specialties, and you will find no difficulty in making the acquaintance of veteran breeders, who will show you the various excellencies of the different varieties, and accompany their "points," as they relate them to you, with practical illustrations, which will be valuable. Your presence at the show helps the society, whose members have worked hard and spent much time and money to give you this opportunity, and when you return home, you can but feel amply repaid for your time and railroad fares, and the trifling expense of admission, which loss is, however, one of the "littles" that "makes the mickle," which is so necessary to the success of an exhibition. You will, probably, not visit more than one or two shows without making up your mind to exhibit, yourself, next year. This is the way the "poultry fever" spreads and grows.—*Poultry World.*

A SMART TURKEY.

There is a turkey, a nice, fat turkey that lives on Spring Hill avenue, and has "horse sense." He has survived numerous Christmas and Thanksgiving days. About the time set for the sacrifice of gobblers this particular bird becomes ill. He staggers in his walk, turns pale in the wattles and leans against the fence for support; his feathers droop and a white film gathers over his eyes. Of course, the owner cannot think of eating a turkey that has all the outward appearance of a corpse; so the execution is postponed to the next joyful occasion. Meantime, the turkey brightens up, recovers his health and prospers until time for him to fall sick again. This is a true story.—*Mobile Register.*

JUDGING THE AGE OF POULTRY.

Examine the feet and legs; the size and appearance of the spurs form a guide, as we are told by an expert in the New York *World.* The skin of the pullet or cockerel is smooth, and has a fresh appearance, while that of the adult fowl yearly grows coarse and more shriveled. Place the thumb and forefinger on each side of the back near the "pope's nose" and press. In young birds the part is supple, in old ones it is difficult to bend. If, in feeling the tip of the breast bone, the grizzle forming there is tender and supple, the bird is young. Ducks that have arrived at the age of two or three years have a deep depression down below the breast feathers, and their waddle becomes more and more ungainly.

BROILERS WILL BE HIGH.

The rich that eat early broilers, will have to pay high for them this year. With eggs at forty cents a dozen, those establishments that buy their eggs cannot afford to hatch out much stock. They could probably afford it if there was more fertility in the eggs, but this "rugged winter" has knocked the life out of fertility. It will be way on to spring before most of the broiler houses will be able to run in good order. The same trouble will be with early ducklings. A. J. Hallock, the proprietor of the Atlantic Farm, Spoenk, Long Island, writes me that the cold weather will keep the ducks back in laying, and thus will the usually large shipments be curtailed. The coming summer season, no doubt will be noted among broiler men as a great hatching time. They will have to utilize that time to get matters a little even, and at the same time satisfy themselves if it will pay to hatch chicks the whole year round. I think the business is gradually drifting that way, and I am glad to see it, for it will open a new channel for practical poultry. The success of the fancy trade greatly depends upon the success of market culture. The future great poultry farms, I think, will be a combination—there will be three and perhaps four branches: broilers, ducklings, eggs, and in many cases fruit. The four do well together, and can be run without interfering with each other. I like combinations the best, for if one branch fails, the other can help out, and in this way success is more assured.—*Michael K. Boyer, in Poultry Advocate.*

AN ENGLISH REMEDY FOR FEATHER PULLING.

In *Feathered World* of the 13th ult., under the heading, "Suburban Poultry Keeping," the writer speaks of having seen mention of ringing fowls for feather-eating, and says: "Each time the hen attempts to steal a feather it will poke the other bird with the point of the pin and cause it to move quickly away." I think what the writer refers to is a letter of Mr. John Till, published in a contemporary on October 17th, 1890, in which he says: "The remedy is simply inserting an ordinary hairpin through the nostrils and mouth, and twisting a few times around them. *Cut off the remaining ends*; this will not interfere with them eating and drinking, and once rung so generally cures them." Now it must be obvious that if the ends are to *poke* the other bird they must project some bit beyond the beak (for plucking a feather is not *always* pecking the flesh); therefore, when the fowl feeds it must poke the end of the pin into the ground every time it pecks at a grain before it can get it. I trust you may consider my desire to protect the fowls from starvation, and their owners from the clutches of the S. P. C. A., a sufficient excuse for inserting this; and I hope our teachers may in the future abstain from trying to *poke* fun at us amateurs.

MOISTURE AND TEMPERATURE.

Unless the hens can provide heat of a certain temperature, and prevent the evaporation of too much moisture from eggs, they will fail to hatch out chicks. All hens are not alike as sitters; some cannot provide sufficient heat, no matter what the conditions may be. The greater the number of eggs in a nest the less heat will have to be provided by the hen after the tenth day. Should the nest be in a moist place, and the bodily heat of the hen be a degree higher than the average, it often happens that the chicks develop so rapidly in the shell that they die before they can get out, being too large to remain in and not sufficiently developed to come out. This is particularly noticeable with incubators filled with a large number of eggs. The chicks, if kept growing rapidly in the shell, die on the eighteenth day. If but very little moisture is provided at first, and gradually increased until there is an excess near the end, the chicks seem to come out stronger and a larger percentage of the eggs hatch.

HARD CROP.

This is the term frequently employed by those who write requesting a remedy for a certain affection to which fowls are liable. This disorder is of two kinds—dry caked, hard crop, and the undigested, swollen, sour, watery condition of the contents of this receptacle at times. Either is bad enough and both are fatal to fowl life, if not taken seasonably in hand. It is not a nice job to perform, but an unpleasant though not very difficult operation, to open, cleanse and sew up the crop thus affected. This is indigestion, simply. The food or water does not pass into the system in the desired way, but lodges in the crop. This ferments, swells, hardens, or sours, and death follows, if the bird be not relieved.

Cut near the top of the crop a slit, lengthwise, with a sharp knife, and then turn out the offending substance by gently pressing it away with the hand, while another person holds the bird firmly upon its side. When all is removed, sew up the slit edges of the crop skin closely with a small sized needle and fine white silk. Feed sparingly on soft food for three days, and, generally, the fowl will recover. This process is for valuable fowls. With a common bird a knock on the head and a swift burial is the least trouble and best "remedy" for swollen crops, as it is for every disease that is liable to leave the fowl in a delicate condition, requiring nursing and care that its value will not guarantee.—*Poultry World*

CATER TO THE PUBLIC.

When poultry is raised for market, the poultryman can learn much in a short time by inspecting the market stalls. The object should be to learn just what the buyers demand, and then aim to supply them. It will be found that all markets are not alike, and that a close observation on the different markets, and also on the demands of the consumers, as well as the seasons when certain kinds of poultry are preferred, will give the farmer or poultryman an advantage which will enable him to secure not only better prices, but how to breed for the best results in selling poultry. It is the buyer who is to be satisfied, as he fixes the price according to the quality and his desires. If yellow legs on poultry are preferred in certain markets, and the buyers are willing to pay something extra for such, it is to the interest of the farmer to raise fowls with yellow legs. The best breed for his purpose is that which he finds will give the buyers the greatest satisfaction, and in so regulating his breeding he is not liable to err.—*Western Farmer.*

---

2 Prairie State Incubators, 300 eggs. $27 each. **E. TRADELIUS, Hammonton, N. J.**

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in sea. Cir, W. A. Williams, Rome City, Ind.

Buff Cochins exclusively. Eggs, one dollar per 13. **Fenton Sherwood,** Suffern, N. Y. Box 69.

S. C. B. Leghorns only, best strains. Eggs $1.50 per 15. W. G. Wadsworth, Pittsford, Mich.

$1.00 for 15. I. Games, W. and B. P. Rock eggs. **E. M. CHRIST, Pine Grove, Pa.**

Huguenot Poultry Y'ds. Mam. P. D'ks, $3. I. Game C'k'ls, $2. C. S. Dorrell, Rossville, Staten Island.

PIGEONS—Fantails, Tumblers, Tarbits and Swallows. Carl J. Welck, Ellsworth, Kansas.

GET THE BEST. My White Turkeys have won every 1st prize at N. Y. and Phila. '92 and '93. Eggs, $5 per 13. D. A. Mount, Princes Bay, N. Y.

S. C. W. Leghorns, B. Minorcas, S. L. Wyandottes. Eggs, $1 per 13. Satisfaction guaranteed. G. Clarence Weaver, Canastota, Madison Co., N. Y.

JNO. D. SOUDER, Telford Pa.—Breeder of W. and Sil. Lac. Wyan., B. Ply. R'ks, B. S. C. Leg., B. Min. and L. Brahs. Eggs, $1 per 15; $3 per 60. Cat. free.

EGGS! EGGS! EGGS! From M. B. Turkeys, 1.5 per 9; S. C. B. Legs., $1 per 13; L. Brahs., $1.25; Part. Coch., $1.25. Address H. F. Barr, Dakota, Ill.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

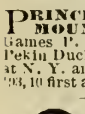
You make a mistake if you buy a Bone Cutter without first getting our circular. **WEBSTER & HANNUM, Cazenovia, N. Y.**

PREPAID, 15 EGGS S. C. Br. Leghorns, **$1.75** B. P. Rocks, **$2.00** Other varieties Circular free. Lock Box 198. **J. D. BRUBAKER, Sidney, Neb.**

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P.O. Goochland Co., Virginia.**

SINGLE COMB WHITE LEGHORNS. Birds scored and mated by **J. Y. Bicknell.** Eggs that will hatch, 13 for $1.00. Circular free. **W. W. COLE, LeRoy, Gen. Co., N. Y.**

PRINCES BAY POULTRY FARM, D. A. MOUNT, Mgr., Princes Bay, N. Y. Ind. Games P. Rocks, W. Wyans. L. Brahmas, Mam. Pekin Ducks, W. Turkeys and W. Guineas. 14 entries at N. Y. and Phila. '92, won 8 1st prizes; 24 entries '93, 10 first and 6 seconds. Stock and eggs for sale. Cir.



THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and receipts for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for Cir. F. Schwarz, M'f'g., Fairfield, Conn

---

APRIL 3d, 1893.

I have this day sold my Bronze Turkey Breeders to Joseph W. Fleming, of Buckingham, Ill. I will also aid, in all my dealing with Mr. Fleming. I have found him an honorable man, and as shall not breed Bronze Turkeys hereafter, I bespeak for him a share of my former patrons. WM. H. VAN DOREN, Buckingham, Ill.

INDIAN GAMES, Buff and Barred Plymouth Rocks, S. C. B. Leghorns. At Philadelphia, Feb. 17-22, we won on Indian Games, 5th Cock, 5th Hen, 2d and 3d Cockerels, 1st and 2d Pullets, 1st breeding pen. On Buff P. Rocks, 2d Cockerel, 1st and 2d Pullets. Choice breeding stock for sale. Eggs for hatching. Write for prices. **G. M. WOODS & BRO., Leaman Place, Pa.**

Owing to change of business, George Purdue has placed all his breeding birds in our yards. The Leading Strains of Prize Winners wherever shown. Typical Shape, Pencilled Tails. Winning at New York, 1893. First and Special for most Typical Cock. First and Second for best Breeding Yards. Eggs from First Class Yards, $5.00 per setting; $10.00 per 2 settings. Other yards, $2.00 per setting; $5.00 per 3 settings. Birds a matter of correspondence. **CHAS. M. GRIFFING & SON, Shelter Island, N. Y.**

THE GREAT AMERICAN TEA COMPANY

A PRACTICAL EVERYDAY **COOK BOOK FREE** containing over 2,500 tested recipes. 320 pages, bound in cloth. Don't fail to get the **WATCH-CLOCK** the greatest novelty of the age. For full particulars address **The GREAT AMERICAN TEA CO., P. O. Box 287. New York City, N. Y.**

It is Sound and is Found to be Round to be Best. NEW ERA INCUBATOR astounds the people! Entirely new methods. Revolutionizing artificial hatching. Don't fail of price Cir. Its regulator is a Reg. and defies the world for **equal.** Most expensively build for price. Most ornamental. Least attention by half. Cheapest! Best! Get it. Lu Vern Farm: Estteselle Heates: Elgantine Brodes. Thoroughly tested, round home and abroad. I want your address, here's mine. Clifton R. Birdges, North New Salem, Mass. It has uniform temperature. The heat is actually governed. It is a [illegible], not a task, to use it. Best material, best b[illegible] We build it well and sell it cheap. Our motto: Small profits, **large** sales.

Wm. T. Eastburn, New Hope, Pa. Breeder of Bl. Min's. Great prize winners. Eggs $2 per set.

---

10 acres, 1 mile from depot, good neighborhood and soil, $300. G. E. CHALFANT, Hanmonton, N. J.

Rose Comb White Leghorns, eggs $1 per 13. Satisfaction guar. Frank Hardwidge, Poneto, Ind.

EGGS! $1.50 for 13, $4 for 39. B. Ply. Rocks exclusively. James A. Brown, Sublette, Ill.

Bone Cutter already for power as well as hand. Warranted not to clog with green bone or clear meat. **Webster & Hannum,** Cazenovia, N. Y.

FOR SALE.—Eggs from thoroughbred S. C. Br. Leghorns, $1.50 per 13; B. P. Rocks and Lt. Brahs., $2 per 13. Address J. M. DIVER, Parma, Ohio.

Fair Hatch Guaranteed. Eggs from ten varieties Pure Bred Poultry. Circular free. **C. LESTER DUFF, Clay City, Ills.**

The smallest chick can eat cut bone cut with our cutter. **WEBSTER & HANNUM, Cazenovia, N. Y.**

FOR SALE. One Perfect Hatcher, with fixtures complete, 1008 capacity. In good order. Price, $60. Address L. S. DOUD, New Haven, Vt.

No other Bone Cutter ever won a prize of **any kind** over ours. Beware of other misleading advertisements. Webster & Hannum, Cazenovia N. Y.

ROSE COMB BLACK MINORCAS AND GOLDEN WYANDOTTES. Eggs, 50c. each. **THEO. CAMPBELL, Lexington, Ky.**

W. F. B. Spanish, S. C. B. Leghorns, S. S. Hamburgs and R. C. W. Leghorns. Egg $2.00 per 13. Satisfaction guaranteed, come and see us. Circular. Clark Beham, Oakland, Armstrong Co., Pa.

Christian Sehman, Levin, Bucks Co., Pa., Breeder of prize winning B. P. Rocks, Indian Games, Buff Cochins and Wyandottes. Cir. Received 20 prizes in 1892 and 1893. Homer Pigeons and Ferrets.

WHITE PLYMOUTH ROCKS, Thoroughbred Cockerels $3. Eggs $2 per 13, $3 per 26, $4 per 52. **S. C. SULLIVAN, Pioneer Dairy Farm, Erie, Pa.**

ELM TREE POULTRY YARDS. Mammoth size B. Ply. Rock Cock, 11 lbs.; hens 9 to 10 lbs. Eggs $2 per setting of 15. **J. P. HAACK, Elmore, O.** P. O. Box 148.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. **D. M. POLING, Van Wert, Ohio.**

FISH-SCALE JEWELRY. Elegant, artistic and durable. For price list send to MRS. W. T. CATHCART, WASHINGTON, D. C., 516 3d STREET, N. W. AGENTS WANTED.

America's White Wonders. The latest and best. Extra layers, large size. Send for illustrated circular to **WM. N. FRENCH** Originator, **New Haven, Vt.**

We save hundreds of dollars to our customers by crating our Bone Cutters so that it goes as 4th class freight. Webster & Hannum, Cazenovia, N. Y.

EGGS for setting from B. Plymouth Rocks, Brown Leghorns and Light Brahmas, M. B. Turkeys and Pekin Ducks, also breeder of Hamshiredown Sheep, English Beagles and Fox Hounds. A. Elwyn Strode, Box 1956, West Chester, Pa.

LEGHORNS! LEGHORNS! Rose Comb Brown and Single Combed Brown, (Croffut and Forsyth strains) and Single Combed White. Eggs and stock in season. **H. B. PINNEY, Calkins, via., Honesdale, Wayne Co., Pa.**

W. F. B. SPANISH, a specialty for 29 years. Average score of ten, last winter 95 17-20. Average score of pen, 96¼. Highest single score, 97. My breeders this season are superior. Eggs at $2.00 per 13; $5.00 per 39. Circulars and my Photo free. **JOHN BENNETT, Sunman, Ripley Co., Ind.**

BUFF WYANDOTTES, PLYMOUTH ROCKS. EGGS $5.00 for 13, from prize winning birds, while getting, get the best. **J. D. WILSON, Worcester, N. Y.**

WONDERFUL BARRING AND COLOR. Eggs for hatching from Plymouth Rocks, scoring over 90 points selected and mated every season by G. O. Brown, who says my birds have "wonderful barring color and size." **MISS ANNA E. BRENNEN, 722 York Road, Baltimore, Md.**

Hundreds of our Bone Cutters in use. **Webster & Hannum, Cazenovia, N. Y.**

BARNEY BROODERS. They are the best for the Farmer, Fancier and Market Poultry Breeder. Circular. Address E. BARNEY, Schenectady, N. Y.

KNAPP STRAIN.—W. Wyandottes, S. C. W. Leghorn eggs for sitting, **$1 per 13, for Incubators in large quantities, $3 per 100 from cross breds. Birds bred especially for laying. Stock for sale. B. H. NOXON, Elm Street, Ithaca, N. Y.**

LIGHT BRAHMAS, DARK BRAHMAS, Barred Plymouth Rocks, S. C. Wh. Leghorns, S. C. Brown Leghorns, Black Minorcas, Silver Laced Wyandottes, Imperial Pekin Ducks. Eggs at $1.50 per setting. Stock for sale. **J. H. DEVINS, Utica, N. Y.**

FACTS! READ!

Don't be deceived by the misleading advertisements, leaflet, circular, etc., going the rounds.

No Bone Cutter ever won over ours, not even at **Rochester** or **New York.**

We send our Cutters on trial, and warrant them to do superior work on all Green Bones.

Ours is the only Bone Cutter that cuts Green Bones fine enough for little chicks.

Clear Meat nicely cut in our cutter.

NO OTHER CUTTER DOES THIS unless meat is first frozen.

Automatic Feed in our Cutter allows either hand to operate the machine.

Hundreds of these Cutters in use. Send stamp for descriptive circular, also opinions of people using these Cutters.

WEBSTER & HANNUM, Cazenovia, N. Y.

The Cream of the Earth! R. C. B. Legs., B. P. R'ks, Sil. Wyans., Pk Bant. Nothing but high scoring birds in our breeding pens! Eggs and Stock in season. Cir. Clarence L. Smith, Loveland, Colo.

TO MAKE HENS LAY

And Chickens grow, nothing beats ground meal and bone. Price $1.50 per 100 pounds; less than 100 2 cents per pound. Send 10c. for sample. Pure ground bone fine or coarse, at same price. Granulated oyster shells 75 cents per 100 pounds; fine ground oyster shells, 50 cents per 100 pounds, f. o. b. Manufactured by J. H. DEVINS, Albany St., Utica, N. Y.

SPONGIA, For Ronp. 25 cents by mail from the Pharmacy. **Boericke & Tafel,** 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. **Oldest Homœopathic Pharmacy. Established in 1835.** *The Poultry Doctor,* 85 pp., 12mo, cloth, 50 cents.

BOOM THE LEADERS!

The two best poultry papers on earth are

FARM POULTRY ..... **50 cts.**
and
POULTRY KEEPER ..... **50 cts.**

We will send **both,** for one year, for **only 70 cts.**

I. S. JOHNSON & CO., Boston, Mass.

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet with Coating, Caps and Nails. Sample and circular free.

A. F. SWAN, 33 Dey St., N. Y.

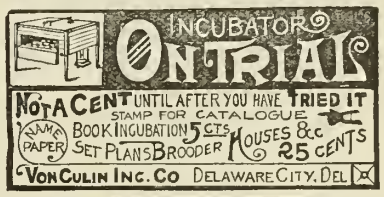
ST. BERNARDS AT STUD.

Ch. Scottish Leader fee $[illegible]0; Eboraeum, fee $40; King Regent, fee $35.

COCKER SPANIELS AT STUD.

Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free.

SWISS MOUNTAIN KENNELS, Germantown, Philadelphia, Pa.



LAMSON'S PLYMOUTH ROCKS,

BARRED AND WHITE.

PRIZE WINNERS EVERY TIME. EGGS FROM 30 GRAND BREEDING PENS, at $3.00 per 13, $5.00 per 26, $10.00 per 65. MORE PRIZES GIVEN THIS STRAIN THAN ALL OTHERS. Order eggs at once. Stock for sale at low prices. Fine circular and price list free.

GEORGE L. LAMSON, Jr.

Box 2, **WEST BOYLSTON, MASS.**

HATCH CHICKENS BY STEAM

With the Improved **Excelsior Incubator,** *Simple, Perfect, Self-Regulating.* Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made. **GEO. H. STAHL, Quincy, Ill.**

Circulars free. Send 6c. for Illus. Catalogue.

NORTHUP'S

Bl'k Minorcas

Have won 133 1st, 96 2d, 12 3d and 2 4th prizes in the last 16 months, competing with all the leading strains and have never lost a special for large size. 1893 catalogue gives dates and places of winnings, and large cut of Rose Comb Black Minorcas.

Geo. H. Northup,

Box 150, **Raceville, Wash. Co., N. Y.**

Spray your Fruit Trees and Vines

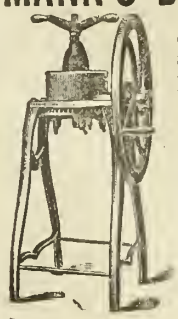
Wormy Fruit and Leaf Blight of Apples, Pears, Cherries and Plums prevented; also Grape and Potato Rot—by spraying with **Stahl's** Double Acting Excelsior Spraying Outfits. Best in the market. Thousands in use. Catalogue, describing all insects injurious to fruit, mailed Free. Address

WM. STAHL, QUINCY, ILL.

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE

WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa

MANN'S BONE CUTTER FOR POULTRY FOOD



Warranted to cut green bones, meat, gristle, and all without clog or difficulty, or MONEY REFUNDED.

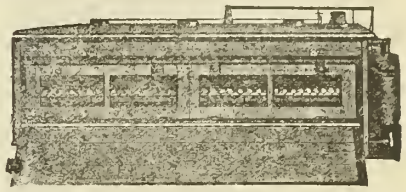
It has been proved

GREEN CUT BONE

is the most economical egg producing food in the world. It will **double the number of eggs,** and make them 25 per cent. more fertile. Send stamp for catalogue. Name this paper.

F. W. MANN,

Pat. June 15, '86. Aug. 20, '89. **Milford, Mass.**



Won at Madison Square Garden, 1892. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR, 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.

Jas. Rankin, South Easton, Mass.

We are So Anxious

That you should see our new circular on

Poultry Supplies.

It illustrates the most complete line ever offered.

FREE

Johnson & Stokes,

—SEEDSMEN—

217 & 219 Market St., Phila., Pa.

"Everything For The Poultry Yard."

Poultry and Supplies

MOST COMPLETE STOCK IN AMERICA.

PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.

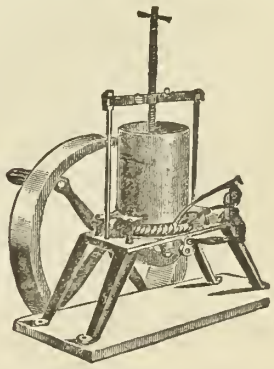
Our Breeds:—L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.

Do You Want Our Catalogue?

60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.

MICHIGAN POULTRY FARM,

Geo. J. Nissly, Prop. SALINE, MICH.



Hundreds of these Bone Cutters sold and sales increasing.

WHY—They are sold at a reasonable price. It cuts all Green Bones **fine enough for small chicks.** It cuts **clear meat, vegetables** to perfection. It has an automatic feed. It takes in a large bone **4x6** inches. It is **warranted** for one year by hand or power. If you can break any part by actual use we furnish such parts free, during this time. It goes at a low rate of freight as cutters are all crated. Knives and cutter-head all one solid piece of chilled steel. Do not buy a Bone Cutter until you get our price. Valuable testimonials, etc. We will furnish you a superior cutter at a price you can afford to pay.

Our cutter was entered at Rochester, N. Y., for exhibition and was very highly commended. It was not entered in time for a premium and therefore did not compete for a premium. Get our circular, which shows you good men's opinion on this cutter, by actual use.

WEBSTER & HANNUM, Cazenovia, N. Y.

Green hones, meat, vegetahles easily cnt with our cutter. Webster & Hannum, Cazenovia, N. Y.

Address Mrs. H. H. English, New Palestine, Mo., for pure bred S. C. B. Leg. and Bu. Cochin eggs.

Lt. Brahmas, B. P. Rocks, W. and S. Wyandottes, Anconas. Dr. S. C. MOYER, Lansdale, Pa.

BUFF LEGHORNS, Red Caps and Minorcas. A. STILLMAN, Alfred, Centre, N. Y.

Eggs—L. Brahs., B. Coch., B. P. Rocks, S. L. Wyans., $1.50 per 13. O. C. PAULSON, Sharon, Wis.

Barred Ply. Rocks, choice stock, eggs $1.50 per 13. Miss H. A. Heaton, Charlton, Saratoga, Co., N. Y.

WHITE Plymouth Rocks, exclusively. Circular free. I. M. GAY, Attleboro, Mass.

EGGS Ind. Games, B. Ply. Rocks, Gol. Polish, $2 for 13. Greenwich, N. Y. Poultry Farms, box L.

Choice S. C. B. Leghorn eggs, $1.50 per 13. CHAS. A. KELLY, Wilsonville, Connecticut.

Knapp and Mungers Str. of S. C. W. Legs. Stock and eggs. Mrs. M. L. Belden, La Grange, Ind.

WM. S. FOLEY, Morris, Ills., breeder of ten leading breeds of pure-bred Poul. Price list free.

S. C. B. Leghorns, choice birds, $4.00 per trio. Eggs $1.00 per 13. W. T. BALL, Moline, Ill.

Address The Santa Ana Incuhator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

A. P. ALLEN, Meadville, Pa. Pekin Ducks and S. C. W. Leghorns; 13 eggs $1.00. Cir.

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

BUFF LEGHORNS that are Buff. Circular free. Send Geo. S. Barnes, Battle Creek, Mich.

B. P. ROCKS exclusively. Eggs $1 for 13. W. E. SNAVELY, Hudson, McLean Co., Ill.

Buy Brown Leghorn eggs from prize takers, $1.50 per 15, $2.00 per 30. E. B. Murphy, Carmel, Ind.

Barred Plymouth Rocks. Egg $1 50 per 15 or $2.50 per 30. H. K. STORB, New Holland, Pa.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY & WATERS, Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

EGGS.—B. Legs, I. G'ms, Wyans., P. R'ks, G'ms, B. Cochs. John P. Smith, North Branch, Mich.

Lt. Brahma, $1.50 for 13; S. C. B. Legs., $1.00 for 13, A No. 1 stock. C. C. CRAVER, York, Pa.

Eggs $1 for 13. Pure bred Lt. Brahmas and S. C. W. Legs. Mrs. B. W. Hartwell, Le Roy, N. Y.

Buff Leghorn eggs, $2.50 for 13; S. C. B. Leghorn and B. P. Rock, $1 for 13. A. C. Fulton, York, Pa.

Eggs for hatching from 11 varieties of pure bred poultry. Write J. O. Bartlett, Lancaster, Wis.

Ind. Games, (Agitator Str.) Eggs now, stock in fall. Wm. Stocker, 94 S. B'd'y, Denver, Col.

Indian Games, B. Leghorns, Poland China Swine. Eggs in season. Summers Bros., Markle, Ind.

Indian Games; fine matings. Eggs $2.00 per 13. Jonathan Summers, Browns Corners, Ind.

I breed the very best S. C B. Leghorns and S S Hamhurgs. eggs $1 per 13. A L. Cary, Lewis, Ohio.

Munger and Forsyth S. C. B. Legs. score 95½, eggs $1.50 per set. Cir. A. Kinzey, Douglass, Kan.

Prize winning I. Games, eggs $2. S. and G. Wyandottes. I. M. INGALLS, Middletown, O.

Prize winning B. P. Rocks and B. Cochins. Eggs $2 per 15, $3.50 per 30. M. L. Edson, Jacksonville, Ill.

Single Comh W. Leghorns, eggs from choice stock, $1 per setting. Hurlbert Bros., Cuyler, N. Y.

Get cir. cut and best of testimonials on our Bone Cutter. Webster & Hannum, Cazenovia, N Y.

Address Frank Buhler for Cata., eggs for hatching a specialty. 1903 N. Western Ave., Racine, Wis.

B. Langshans, R. C. B. Leghorns, S. C. B. eggs, $1.50 per 15. H. J. AHL, Carlisle, Pa.

B. P. Rocks, Partridge Cochins and Dark Brahmas. Eggs $1.50 per 13. W. E. B. Dora, Loxa, Ill.

S. G. DORKINGS: EGGS $1.00 FOR 13. J. L. RICE, Rensselaerville, N. Y.

Our Bone Cutter does not clog with green hones nor meat. Webster & Hanuum, Cazenovia, N. Y.

Send 5 cents for new "Treatise on Poultry Culture," "Poultry Cata. W. D. Forbes, Montowese, Ct.

The Webster & Hannum, Cazenovia, N. Y., Green bone Cutter has an Automatic Feed.

Silver Laced Wyandottes, thorough bred stock. Eggs $1.50 per 13. Jno. Wurster, Keokuk, Ia.

SEE HERE. 39 pure hred Rose Comb Brown Leghorn eggs $2.50. J. H. Kaufman, Gardner, Ill.

WYANDOTTES, Silver only. Eggs $1.50 per 13. Cir. free. Robert Murphy, Hukle, Kan.

W. P. Rock eggs for hatching, heavy, vigorous stock Cir. Brookside Poul. Y'ds, Rocky Brook, R. I

A 1 Spangler Etters, York Co., Pa. Indian Games. Circular, 15 varieties, thorough bred poultry.

Buff Leghorns, very fine. Eggs $3 per 15. Mam. B. Turkeys. F. C. Whitemarsh, Cuyler, N. Y.

BUFF LEGHORNS.—Eggs $3 for 13. GILBERT CARPENTER, Cazenovia, N. Y.

Eggs for hatching, six best varieties. Stamp for Circular. J. HEAGY, Trindle Spring, Pa.

J. J. Fleck, Tiffin, Ohio. Prize winners. Imp. I. Games and W. Legs. Eggs for hatching. Cir

Rose Comb Brown Leghorn and B. P. Rock, eggs $1 per 13. E. B. Ketcham, South Haven, Mich.

Rose Comb Brown and W. Leghorns and Silver L. Wyans., 15 eggs $1, 30, $2. J. W. Cook, Poneto, Ind.

S. C. B. Leghorns only, best Strains and finest birds, Eggs $1 per 13. Eugene Keith Nelson, N. Y.

THERMOMETERS, accurately tested, for Incu. Cheap. T. Rackham, 245 E. 56th St., New York.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Eggs from choice B. Langs., B. P. Rocks, L. Brahs. and S. L. Wyans. Edw. Boyer, Thorntown, Ind.

Keller's Gol. Wyans. win at all shows. Eggs $3. 9 yards. Cir. Ira C. Keller, Prospect, Ohio.

E. T. L. Benedict, East Poultney, Vt., breeds W. P. Rocks, exclusively; eggs $1.50 for 13.

Our Bone Cnter warranted. WEBSTER & HANNUM, Cazenovia, N. Y.

For Sale.—L. B. C'k'ls, $2: L. B. P. R. S. C. B. Legs. eggs $1.50 per 13. Mrs. J. Scofield, Lishon, Ills.

P. Rock and D. Brahma eggs for hatching. Ohwehetuck Poultry Farm, So. Windham, Ct.

Pure green hone meal, Gran. hone and crushed oyster shls. No Chem. J. H. Slack, Bl'msh'y, N. J.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

Green Cut Bone sufficient for 80 fowls cut in 10 minutes by hand Particulars free. WEBSTER & HANNUM, Cazenovia, N. Y.

A. J. MOWRY, Milan, O. Cor. Ind. Games, pen Imp. and select hirds. $3 for 13 eggs, pen Choice Birds, $2 for 13 eggs.

Light Brahmas. Strictly thorough-hred. First prizes in the strongest competition, great layers. Egg $2 per 13. L. R. Whitaker, Brighton, Mass.

Prize winning S. and W. Wyans., I. Game and P Ducks. Stock and eggs for sale, send for Cir. M. H. LEIDY, Blooming Glen, Pa.

Colchester Poultry Yards, Clark H. Otis, Prop., Colchester, Conn. Breeder of Bar. Ply. Rocks exclusively. 8 yards pure hred stock. Eggs $1 per 13.

Leading Strains. S. C. B. Leghorn eggs for hatching, from selected stock only. $1 00 and $1.25 per 15. Address Box 41, New Holland, Pa.

R. C. Brown Leghorn, B. P. Rock and B. Cochin, eggs $2 per 15, $3.50 per 30. Write E. D. BURroughs. Wamsitta Poultry Yard, Buttonwood, R. I.

BROWN LEGHORNS ONLY.—Single and Rose Comb Prize strains. Eggs $1.50 for 13. A. E. HOLMAN, Hammonton, N. J.

Buff, Brown, Black, White Leghorns. High scoring birds. Send stamp for large Cata. FAIRY LEGHORN YARDS, Newell, Iowa.

C. I. Game, Buff Leghorns, B. Minorcas and L. Brahmas, eggs. Hatch guaranteed Circulars. E. G. MARGUARDT, Burlington, Iowa.

Daylight Poultry Yards of Leroy, Fla., C. Y. Miller, Prop., breeds 10 of the leading varieties. Eggs for hatching $1 per 15, incubator eggs $5 per 100.

Eggs from Houdans, B. and W. Plymouth Rocks. S. C. B. Leghorns and Rouen Ducks Eggs $1.50 per 13, $3.00 per 30. Chas. Hopper, Ashley, Ohio.

EGGS from best Lt. Brahmas and S. C. White Legborns. (Knapp strain). Satisfaction guaranteed, prices on application. R. E. Avery, Sheffield, Pa

EGGS. Lt. Brahma, B. P. Rock, B. Langshan. P. Cochin, 1 set., $1.25; 2 sets. $2.25; 3 or more, $1 each. W. G. MYER, Madison, Wis.

Eggs from choice hirds, I. Game, B. and W. P. Rocks, W. Wyandottes and S. C. B. Leghorns, $1.00 for 13. JOHN HEYD, Felton, Del.

From standard poultry, eggs, choice stock, Black Langshan, W. P. Rock, $2 per 13, $3 per 26. Pair $5, trio $7. Sat. Guar. Mrs. Irene Fleming, Circleville, O.

APOLLO BROODER. Top heat, hot water, hot air attachment, used indoors or outdoors, Stamp. AYER BROODER CO., Ayer, Mass.

F. R. MINNER, Bechtelsville, Berks Co., Pa. Buff Leghorns, Ind Game, S. S. Hamb., and Red Caps. Eggs for sale. Cir. Stamp for reply

Home of the S. C. Leghorn. Eggs $1.50 per 13; P. Rocks and Lt. Brahmas, Eggs $1.00 per 15. Birds scoring 90 to 95 points. H. C. HUNT, Devan, I.

Indian Games (Sharp's and Frayne's) B Leghorns, (Arnold's) Minorcas and Langshans. Eggs $1 50 per 15, $2 per 26. Lance & Co., Washington, N. J.

15 eggs for $1.00, Black Minorcas, and Red Caps from Imp. stock pure white P. Rocks, H P. D'k. egg $1. Cir. South Side Poul. Y'ds, Frankford, N. Y.

$1.00 per 13, W. C. B. Polish, W. P. Rock, eggs. S. L. Wyandottes, S. C. B. Leghorns all pure hred. E. S. Lamherson, Frankport, N. Y.

PIT GAMES ONLY, ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

Barred Plymouth Rocks exclusively. Eggs for hatching from stock fine, large and vigorous. Send for price list. E. G. McCormack, Perryville, Ind.

FREE! Eggs free. Buff Leghorns. Ind. Games and eight other varieties. Stamp for Cir. Enterprise Poultry Yards, Annville, Pa.

A. H. ANDERS, Lansdale, Pa., Breeds the best W. Dorkings, W. and B. Leghorns, W. Min. and P. Ducks. Satisfaction guar. Write him.

BEATTY'S PIANOS and ORGANS $33 up. Want agt. Cat'lg. free. Address DANIEL F. BEATTY, Washington, N. J.

ROSE COMB BROWN LEGHORNS a specialty, also B. P. Rocks. Eggs $1.50 per 15, $2.50 per 30. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. R. Leghorns in the West. Eggs $2 per 13.

Eggs from B. Ply. Rocks, Lt. Brahmas, Br. Legs, P. and R. Ducks and B. Turkeys. Birds always on hand. A. Elwyn Strode, West Chester, Pa.

E. C. Thompson, Elk Creek, Neb. Breeder of fine poultry, S. C. B. Leghorns, B. P. Rocks and Partridge Cochins. Eggs and stock in season.

W. C. B. Polish, best layers and highest scoring stock 93½. I challenge the world to produce their equal. Eggs. Cir. P. P. Wingerter, Erie, Pa.

WISCONSIN Poultry Farm. High class land and water fowls. 10 pp. Cat. Mention this paper, Harry Bassindale, Somers, Wis.

White Holland Turkey eggs $2.50 per 11, Indian Games $2 per 13, S. C. B. Legs. $1 per 13. Stamp for Cir. FRANK L. MEAD, Norwalk, Ohio.

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. R. Brabazon, Delavin, Wis.

When you buy a Bone Cutter get one that will cut clear meat, the Webster & Hannum does this beautifully, without freezing summer or winter.

EGGS $1 for 13. Barred Plymouth Rocks, Light Brahmas and Black Langshans. Choice stock. Mrs. T. A. Shuff, New Berlin, Ill.

EGGS. G. and W. Wyan., $2 per 13, B. P. R'k., $1 per 13, Ind. Games, $3 per 13. A few fine Cockerels for sale. T. F. Higley, Fairfield Ia.

HATTON POULTRY YARDS. 20 Var. pure-bred poultry. Eggs $1 per 13. Send for 24-page catalogue. J. W. Miller, Hatton, Cum. Co., Pa.

Choice Farm Range, S. Wyans., L. Brahs., fine Part. Cochins, eggs $1 per 13. Rabbits, Ger. Hares and Guinea Pigs. A. B. Wingert, Northampton, Ohio.

Fowls! Eggs! P. Rocks, L. Brahs., W. and Gol. Wyans., B. Leg. B. M. Rouen Ducks, P. Guineas, $1 per set. Stamp. Mrs. J. P. Hellings, Dover, Del.

Buff Leghorns, Lister Kay Strain, Pure Buff, best in America. Eggs $5. Cockerels and pairs for sale. W. A. MULLIN, Mt. Holly Springs, Pa.

Sand Ridge Poultry Farm, for eggs to hatch, B. P. Rocks, S. L. Wyans, L Brahs and Buff Cochs. $2 for 15 eggs. Loomis & Hendricks, Rochester, Ind.

Indian Game and Buff Leghorn eggs, $1.50 per 13. Imported stock. Satisfaction guaranteed. M. S. PRATT, Fayetteville, N. Y.

HOWELL'S Leghorns, White and Brown, won 35 prizes in 1892. Circular free. Eggs $2.00 for 13, $5.00 for 40. C. E. HOWELL, Elmira, N. Y.

EGGS.—R. Cap, Golden and S. L. Wyandotte, L. Brahma, B. P. Rock, Bl. Minorcas and P. Ducks, 15, $1; 30, $2 J. D. Brands, P. M., Warrington, N. J.

EGGS FOR SETTING. Lt. Brahma, W. P. Rock, B. Cochin and birds for sale and show stock. None hetter. J. A. Roberts, Malvern, Pa.

Light Brahmas and Houdans, eggs from stock that is second to none. $1.50 per 13, or $3.00 per 30. J. A. MESSLER, Blairstown, N. J.

Cheap, durable, practical and warranted. You take no chances in getting our Bone Cutter. WEBSTER & HANNUM, Cazenovia, N. Y.

DR. WIANT, Marion, Ohio. Sole Importer of Geffeken's Buff Leghorns. Eggs $2.50 per 13, $6 per 40, guaranteeing a good hatch. Improved Spongia, great Roup Cure, 25c. 50c and $1 packages.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. B. A. FOX, Richmond, Va.

$20 PHOSPHATE FOR CORN AND POTATOES. Sold to farmers direct. No Agents. York Chemical Works, York, Pa.

Buff Leghorns eggs, from my 2d prize cockerel at New York Show. My Buffs are fine rich buff color, all from best Imp. stock and other varieties of fine poultry. E. J. Chaudier, Kennett Square, Pa.

Don't get a Bone Cutter with which you are obliged to do all the work with one hand, with ours you can use either hand. Our machine feeds itself. WEBSTER & HANNUM, Cazenovia, N. Y.

Nashoba Brook Poultry Farm, Brooks & Co., Props., East Acton, Mass. Breeders of pure bred and prize-winning Eng. Red Caps and Single Comb White Legs. Stock and eggs for sale. Cir.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any Incubator. 2 cent stamp for circular. H. D. MOULTON, Taunton, Mass

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock. Exhibition hirds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

$2 00 Eggs for Fanciers } LIGHT
$1.00 Eggs for Farmers } BRAHMAS.
3 Prizes, Boston Light Brahma Show, 1893. Write C. S. NEWELL, Lisbon Falls, Maine.

Leghorns and Hamhurgs eggs for hatching from R. C. W. and B. and S. C. B. and S. S. Hamhurgs, 13 for $1.50, 26 for $2.50, 39 for $3, also incubator eggs. HOMER J. BROWN, Harford, Cut Co., N. Y.

Golden Wyandottes. Eggs for hatching from handsome, large, fine, evenly laced Gol. Wyandottes, $1.50 for 13; $2.75 for 26 Orders promptly filled Stock for sale in fall. Ad. T. H. Hoskius, Warren, Pa.

Golden and White Wyandottes and White Plymouth Rocks. Eggs from choicest stock $1 50 per 13, $4 00 per 39. Chromo Cir. free. See May, 1891, No. POULTRY KEEPER. T. F. Miller, Mattituck, N. Y.

STRANGE, the Poultryman, Betzer, Mich. Eggs $1.50 per 13, $2.50 per 26. Light Brahmas, Buff Cochins, Golden Wyandottes, INDIAN GAMES. Prize winners in every yard.

GRAND YARDS Ind. Games, best selected, $4 for 15 eggs. Fine, $2 for 15. B. P. Rocks, best select, $1.50 for 15. Fine, $1 for 15. S. C. B. Legs., $1 for 15. Wm. R. McKuett, Kennedyville, Kent Co. Md.

$1.00 FOR 13 EGGS of S. Wyan., S. C. B. Leg., L. Brah., B. Minorcas. A. KUNZE, Garden Prairie, Ills.

Peninsular Poultry Yards, St Ignace, Mich. Eggs from large, hardy, vigorous stock. Part. Cochins, I. Gms, B. P. Rks, B. Minorcas, (extra heavy) W. Wyn, R. Caps, $1 to $2.50 per 13. Cir. M. F. Stellwagen, Prop.

W. & B. MINORCAS. Fine exhibition birds and first-class breeding stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

INDIAN GAMES. Sired by "J. H. D.", and other choice strains, Eggs only $3 per 13. Circular free. DAVID C. McELROY, St. Clair, Mich.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

True Buff Leghorn eggs $2.50, C. I. Game egg $2.00, G. Wyandotte eggs $2.00 per 12. No white feathers. Express paid if less than 1,000 miles. F. A. HOWE, Waterford, Pa.

ROUP CURE.—A new and scientific remedy for the speedy cure of Roup and Canker, and guaranteed to cure every case. Put up in 50c. and $1 bot. by express only. Half doz. small size, $2 50; large size, $5. Large size will cure 50 cases of Roup. Full directions for treatment with every bottle. Address OWSLEY & DUNNINGTON. Darlington. Ind.

EGGS from prize winning B. Turkeys. Jos. W Fleming, Buckingham, Ill. Stock after Sept

Headquarters for P. Rock eggs, the practical Orrocco strain, $1.50 per setting, also Scotch Terrier pups. H. G. WHITEMAN, Milroy, Ind.

If any part of Bone Cutter should break in one year we furnish parts free. WEBSTER & HANNUM, Cazenovia, N. Y.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear rabbits.

BLACK MINORCAS and INDIAN GAMES, other varieties, eggs for hatching. Rev. L. E. CRUMBLING, Hall, York county, Pa.

WHITE FOWLS, Prize winners, 92 to 97. Eggs. W. Cochins, $2.50; W. C. W. Polish, $2; S. C. W. Legs., $1.50. Cir. free. Geo. A. Friedrichs, Erie, Pa.

Buff Leghorns, B. P. Rocks, Ind. Games, Opingtons. EGGS $3 per 15 or $5 per 30. Lt. Brahmas, P. Rocks, Wyandottes, Langshans, Minorcas, W. and B. Leghorns Eggs, $2 per 15 or $3 per 26. Cir. Lewis C. Beatty, Washington, N. J.

$75 REWARD.

For best birds from my eggs. B. P. Rocks, GRAND strain, best layers and weighers in America. Send stamp for Annual. F. Grundy, Morrisonville, Ill.

STOP, LOOK AND LISTEN. $1.00 for 15 eggs. Finest stock of nearly all varieties of Poultry and Pigeons. Buff Leghorns, Indian Games, Wyandottes, etc., etc. Beautiful circulars free. GEO. B. ULRICH, Annville, Lebanon Co., Pa.

Why don't you send us $10 and get that Bone Cutter you have so long wanted, and get your hens to laying now while eggs are high, our machine is fully warranted. Webster & Hannum, Cazenovia, N. Y.

BARRED PLYMOUTH ROCKS. PURE BIRDS. CHOICE STOCK. No more birds to spare, but have eggs at $1.00 per 13; or discount on 100. A. O. ROBERTS, Atlantic, Iowa.

Eggs for hatching from standard Barred Plymouth Rocks and Silver Laced Wyandottes, Hawkins Strain, extra fine, excellent layers, $2 per 13. Mammoth Pekin Ducks, Rankin Strain, $1 per 12. Sussex Poul. Yards, Newton, N. J., A. N. Cosner, Prop

EGGS FROM PRIZE MATINGS, Indian Games, $2, $3 and $5 for 13; Barred Ply Rock, $1 and $2 for 13; Golden Wyandotte, $1 and $2 for 13; S. C. B. Leghorns, $1 and $1.50 for 13; W. Wyans., $2 for 13. Cat. E. E. Hudson, Kennedyville, Maryland.

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. G. W. PRESSEY, Hammonton, N. J.

LOOK HERE. If you want eggs of good stock at low prices, write to A. F. KIMMEL, Orwigsburg, Pa., Prop. of The Orwigsburg Poultry and Stock Farm. Cornish Indian Games and all leading varieties. Honest dealing my motto.

J. ALWYN BALL, Summerville, S. C. Won at the "Great Southern" Jan 10-14, 1893. 1st Cockl, 1st pullet, 1st pen, 78 Langshans in class. G. O. Brown and H. S. Ball, Judges. Write him for circular at Charleston, S. C., P. O. Box 43.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To J. L. CAMPBELL, West Elizabeth, Pa. This ad is good for $5.00 part pay for an Eureka Incubator

BLACK MINORCAS. Pen 1, first prize cockerels at Detroit, Mich, 95½ by Bicknell; hens with score cards 94 to 96½ Best pen in the West, $2.50 per 13. Yard 2, 10 lb. Cock, $1.50 per 13. Barred Ply. Rocks, 2d prize Cock'l, Detroit. Elegant hens $2.50 per 13. Yard 2, 9¾ lb Cock'l 90½, 90 or over Pullets, $1.50 per 13. PENINSULAR POULTRY YARDS, St. Ignace, Mich.

POLLARDS' PEKIN DUCKS

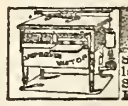
are PROFITABLE POULTRY. 300 EXTRA LARGE, VIGOUOUS BREEDERS. EGGS, $1.25 FOR 12, $6.00 FOR 100, $55.00 FOR 1,000. GEO. H. POLLARD, POULTRY DEALER, PAWTUCKET, R. I.

Concord Poultry Club will sell eggs from choicest prize-winning Cochins, Brahmas, Langshans, Leghorns, Ply. Rocks, Houdans, I. Games, Wyandottes, W. C B. Polish and Minorcas. Club composed of thirteen members, each member makes a specialty of one and not more than two breeds. Eggs $2 and $3 per 13. Jas. A. Tucker, Sec'y, Concord, Mich.

ARNOLD'S BUFF LEGHORNS

are the finest collection on earth, and you will miss it if you order eggs or stock before sending a 2 cent stamp for our new catalogue containing colored plate of Buff Leghorns, and the grandest lot of testimonials ever seen. Eggs $3 0, $5.00 and $10.00 per 13. Address A. D. ARNOLD, Dillsburg, Pa.

CHICKEN-HATCHING BY STEAM



IMPROVED VICTOR INCUBATOR
Simple, easy of operation, self-regulating, reliable, fully guaranteed. Send 4c. for illus. Catalogue. Geo. Ertel & Co., Mfrs, Quincy, Ill. U.S.A.

MAPLE FARM DUCK YARDS.

The Largest Duck Farm in America

Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices JAMES RANKIN, South Easton, Mass.

FINE CHICKENS FOR SALE at a bargain of the following varieties: WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN and WHITE LEGHORNS, BLACK, BUFF and PARTRIDGE COCHIN. Also PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.

ONLY 150 birds left, Buff Cochins, Lt Brahma and B. Langshans. Don't you think it a good investment to purchase a few of them at only $2.00 each. This is a bargain as they are all my choicest stock. Just send your order and I will select the birds to suit you Send for circular of the best White washer and Vermin Exterminator in the world. W. C. BYARD, Walnut Hills, Cincinnati, Ohio

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. Always safe and reliable. Free from smoke and soot and more convenient and economical than any other. Manufactured by L. R. Oakes, Bloomington, Ind. Sold at Topeka, Kan. by J. P. Lucas; at San Francisco, Cal., by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

EGGS. Langshans, Minorcas, and Anconas, $2.00 per 15; $5.00 per 45.
IND. GAMES, $4.00 per 15. $7.00 per 30.
BUFF LEGHORNS, $5.00 per 15. $9.00 per 30.
BIRDS, Single, $3.00 to 10.00; Pair, $5.00 to $15 00; Trio, $7.00 to $25.00.
Send 4 cents in stamps for Illustrated Catalogue.

C. C. CERTAIN CURE For Cholera, Roup, and other diseases of poultry 50c. per lb. 5 lbs for $2.

C. F. CHICK FEED Is invaluable for young and growing chicks. $3 ⅌ 50 lbs. $5 ⅌ 100 lbs.

S. S. SURE SHOT Is death to Chicken Lice and all insect life 25c per lb. 5 lbs for $1.

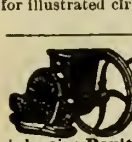
Sent by freight or express on receipt of price. (*Sixteen cents extra per pound if sent by mail.*) We ask you to give these preparations a fair trial, and be convinced of their superior merit. Every poultryman should send two cent stamp for circular giving particulars.

F. A. MORTIMER,
Pottsville, Penna.

ST. BERNARDS.
(CHOICE STRAINS.)
PUPS FOR SALE.
Send stamp for circular giving full particulars.
MALES, $20.00 to $50.00.
FEMALES, $15.00 to $35.00.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pildimmou strains. P. H. Jacobs, Hammonton, N. J.

CUT PRICES ON EGGS, from $3.00 and $5.00 per setting. B. Langshan and Buff Cochins, $1.50 or 2 settings, $2.00. W. C. B. Polish, $2.00 per setting. 14 other varieties of eggs from prize winners. Greatest yards known. Stock for sale. Describe your wants. Sends stamp for illustrated circular. **H. E. GAVITT & CO.**
Topeka, Kansas.



GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent), 100 per cent. more made in keeping Poultry. Also POWER MILLS and FARM FEED MILLS. Circulars and testimonials sent on application. WILSON BROS. Easton, Pa.

Sweepstakes at Chicago, 1891
B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free.
F. M. MUNGER, DeKalb, Ill.

A NEW CATALOGUE & GUIDE to Poultry Raisers, the finest published, containing 8 colored plates and 40 fine engravings of poultry, with description of each variety; tells how to raise and manage poultry, plans for poultry houses, remedies for all diseases, 60 pages 7 x 10. Ready for distribution Jan. 15, '93. Send 10c. silver or stamps. Address,
C. C. SHOEMAKER, Freeport, Ill.

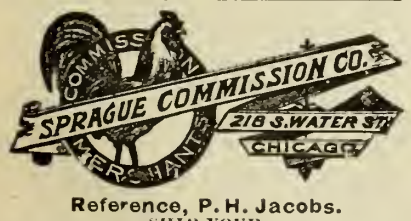
LIGHT BRAHMAS exclusively, large size, fine shape, well marked, extra hackles, leg and toe feathers, remarkable layers, almost non-sitters. Always win in strongest competition. At Bloomington, Illinois, Dec. 1892, 1st on cock, 94½; 1st and 2d on hens, 92½ and 91½; at Indianapolis, Indiana, Jan. 1893, 1st on cock, 92; 1st and 2d on cockerels, 95 and 94; 1st, 2d and 3rd on pullets, 95, 94½ and 94½. A prize on every bird shown. Stock for sales. Eggs in season. **ALFRED DOYLE,**
Morgan Park, Ill.

INCUBATORS & BROODERS
PAT'D.

Brooders only $5.00. The best and cheapest ever invented for hatching and raising Chicks, Turkeys and Ducks. 40 First Premiums, 1200 testimonials also eggs for hatching and fowls for sale of 40 varieties. Thoroughbred fowls warranted true to name. G. S. SINGER, Send for Catl'g. Cardington, O.

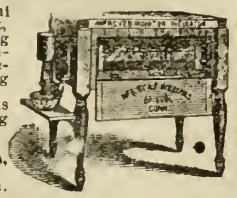
Spratts Patent
Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys: it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N.Y.

LIKE WILL BEGET LIKE."
700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. At **New York**, Feb. '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.



Reference, P. H. Jacobs.
—SHIP YOUR—
Broilers, Poultry, Eggs, Butter
And all other Produce to us.
We always get the highest market price and guarantee prompt and honest returns. Send a postal card and we will mail you market reports and shipping tags free. Mention this paper.

MONITOR INCUBATOR.
New Model.



The most successful machine in the market, and endorsed by leading Fanciers in this country and Europe, because they hatch strong healthy chicks.
30 First Premiums awarded at the leading shows. Address
A. F. Williams,
L. B. 698, Bristol, Conn.

COUPON.
Cut this out and enclose stamp, and we will mail one of our large illustrated catalogues: Ad. No. 18.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1 00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.90, postpaid. They make handsome and valuable books.
Address **Poultry Keeper Co.,** Parkesburg, Pa

ONLY $1.10! CANNOT BE EQUALED!
FARM POULTRY (Monthly)..... 50cts
POULTRY KEEPER (Monthly) ..... 50 "
FARM and FIRESIDE (Semi-Monthly) 50 "
MODERN COOK BOOK..... 50 "
Total..... $2.00
All sent postpaid on receipt by us of cash or stamps, $1.10. Sample papers free. Address
FARM POULTRY,
Box F. P. BOSTON, MASS.

Wyckoff's S. C. White Leghorns,
America's Business Hen.
Breeding stock carefully selected from over 600 extra layers. Eggs for hatching $2.00 per 15, $3.75 per 30, $5.00 per 45, $10.00 per 1 0. Send for free, illustrated and discriptive circular.
C. H. WYCKOFF,
GROTON, - - N. Y.

Scribner's Lumber and Log Book.
OVER ONE MILLION SOLD.
Most complete book of its kind ever published. Gives measurement of all kinds of lumber, logs and plank, cubical contents of square and round timber, stave and heading bolt tables, wages, rent, board, capacity of cisterns, cord-wood tables, interest, etc. Ask your bookseller for it, or sent postpaid for 35 cents.
G. W. FISHER, Box 238, Rochester, N. Y.

WINNERS AT BOSTON, STONEHAM and BROCKTON, PLYMOUTH ROCKS, W. WYANDOTTES. Birds for sale. EGGS I setting, $2; 2 settings, $3; 4 settings, $5. CHARLES RIVER POULTRY YARDS, Newton Lower Falls, Mass. Send for Circular.

DOG TRAINING and How to Teach Your Dog Tricks. The instructions in this valuable little book are practical and ample for any amateur, and thorough humane. This work also contains a number of remedies for various ailments, and therefore is earnestly recommended to dog owners. It tells how to make a dog Answer to his Name—Give his Paw—Lie Down—Beg—Leap—Jump the Rope—Walk—Dance—Fetch and Carry—Bring his Tail in his Mouth—Roll a Ball—Walk on Stilts—Walk on Forelegs—Stand on Head—Sing—Make Believe Dead—etc. etc. Postpaid for 15 cents. Address Poultry Keeper Co., Parkesburg, Pa.

It's a Fact
that Emery S. Pugh's strain of
Black Minorcas and Golden Wyandottes
always win whether exhibited by myself or my patrons. They have won highest honors the past fall and winter at Syracuse (N. Y. State Fair), Albany, Gloversville and Canastota, N. Y., R. I. State Fair, R. I. poultry show, at Waterloo, Iowa, Denver, Col., and other shows. I lead on these two varieties and have probably imported more and better Minorcas the past year than any breeder in America. Eggs for hatching from my imported and prize winning birds. Also Barred and White Rocks, Part. Cochins and Pekin Ducks. Send stamp for my handsome 24-page catalogue.
EMERY S. PUGH,
Importer, Exporter and Breeder.
UTICA, - - N. Y.

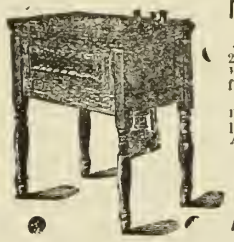
KNAPP BROS.
ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD
WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.
Proof—The records at 29 of the **leading** shows during the past ten years—**Highest Honors every time.** We sell annually **hundreds** of **Exhibition** and **Breeding birds** but **never** at **any** price, our **best** tested **breeding** stock, $400 in **one** order at a recent sale, for 18 show birds. **OUR MATINGS** for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce **sure winners** and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. **100 fine breeding Cockerels,** separate or mated up in **pairs, trios or breeding pens** to suit customers, at reasonable prices for quality. **EGGS** for **HATCHING** from our **choicest matings,** at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address
KNAPP BROTHERS,
BOX 501, FABIUS, N. Y.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,
ROLLS 150 FEET LONG.

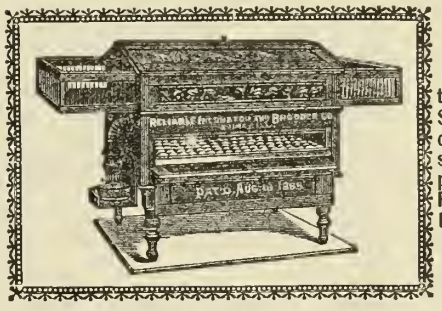
	12	18	24	30	36	42	48	60	72 inch.
3 Inch No. 18.	.80	$1.10	$1.50	$1.90	$2.30	$2.65	$3.00	$3.75	$4.50 Per Roll.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.40 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.
PETER DURYEE & CO., 215 Greenwich St., N. Y.
SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls.

Three Years in Succession at the Greatest of American Shows: (New York.)
We Have Won All Firsts on Indian Games in the open classes. A record no other breeder of any variety can equal.
At the great show at **MADISON SQUARE GARDEN, February, 1892,** we won **1st** and **5th on Cock; 1st, 2d** and **3d on Hen; 1st** and **2d on Cockerel,** and **1st, 2d, 3d, 4th** and **5th on Pullets**
CHALLENGE CUPS for best hen and pullet. **GOLD SPECIAL** for twenty best young birds, and all other specials.
At Philadelphia our Golden Wyandottes won all firsts and seconds.
We breed **Champion Red Caps, Andalusians, Black Minorcas, White Ind. Games, Creve Coners, Ascels and Pekin Ducks.**
Stock and eggs always for sale. Twenty-page Catalogue free.
C. A. SHARP & CO., Lockport, New York.
The Home of the Indian Game.



The Prairie State Incubator
takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 25th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch. First Premium, $20.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.
Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
Homer City, - - - Penna.



The World's Fair Hatcher.
Our Incubator will be in constant operation at the WORLD'S COLUMBIAN EXPOSITION. The most perfect machine ever offered the Poultry Fraternity. Send 4c. stamps for descriptive Catalogue. It will pay you. "40" Yards of High-class Poultry. Illustrated Poultry Catalogue FREE. Address
Reliable Incubator & Brooder Co.,
QUINCY, ILL.
Mention Poultry Keeper.

GOLDEN WYANDOTTES.
GET THE BEST!
The Original, Genuine McKean Strain.
Eggs for hatching, $1.75 for 13, $3.00 for 26, eggs carefully packed in baskets to safely go any distance and hatch well. Breeding and exhibition Golden Wyandottes for sale after Sept. 1st, 1893.
GOLDEN WYANDOOTE CHROMOS size 8 1-2x11 inches, elegantly CHROMO LITHOGRAPHED in six different colors. Price each 4 cents, per dozen 40 cents, postpaid by mail. Orders promptly filled.
A. J. FOUCH, Warren, Pa.

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.
It is acknowledged to be "**The Best Poultry Magazine Published**" in the world.
Send for Index to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin with any back number you desire.**
Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "**What has been done, can be done again.**" Remember the price; 50 cts. one year, six months 25 cts.; sample free. Remit cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

HAWKINS BREEDS AMERICA'S BEST
More Prizes Awarded This Strain Than All Others.
Plymouth Rocks
—AND—
Wyandottes
EGGS FROM FORTY GRAND BREEDING PENS
1 setting $5.00, 2 settings $8.00, 3 settings $10.00, 5 settings $15.00.
Selected Breeding Birds for Sale.
Catalogue of America's greatest Poultry Farm free.
A. C. HAWKINS,
Lock Box 4. **LANCASTER, MASS**

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Brooder.—Which brooder is reliable and good, and at the same time not too high priced to be out of my reach? I do not need any incubators, as I keep 125 hens, and they turn off chicks faster than I can take care of.—M. A. G., Whitefield, Ind.

Consult the advertisers in this issue. They are all reliable.

Small Eggs.—I have a Silver Sebright Bantam pullet that lays every day, but she lays an egg like a sparrow, sometimes larger, but is apparently healthy and well. She is about two years old. I examined the eggs and there is no yellow in them, just the white of the egg. What would you do to make her lay larger eggs?—W. H., Grand Rapids, Mich.

Undoubtedly the hen is out of condition, and, if she is a persistent layer of that kind of eggs she had better be killed. An experiment might be made in changing her food.

Poultry Supplies.—1. Will you tell me where I can buy poultry supplies wholesale? 2. Does it do any hurt to cork up the place where the hot water is poured in an incubator?—R. E. M., New Haven, Mich.

1. Geo. J. Nissly, Saline, Mich. 2. It is better to loosely fit a cork in the pipe.

Eureka Brooder.—How can I get the plans and specifications for building a Eureka brooder?—J. W., So. Junta, Col.

Write to J. L. Campbell, West Elizabeth, Pa.

Gobbler.—Please tell me what was the matter with my gobbler. He was all right this morning and strutting around, and in less than ten minutes after lay dead. He was not too fat, neither lousy. I cut his crop open and found it all right. There was blood in his neck from his crop to his head.—E. S. A., Pleasant Lake, Ind.

Probably due to an injury.

Malays.—Where can I get Malay Games? I do not see them advertised in your paper.—T. B., Kennett, Cal.

Write to the Game Fanciers' Journal, Battle Creek, Mich

Green Food.—In feeding broilers are we to limit the quantity of green alfalfa, and does it make any difference whether it is the last meal at night?—W. B., Conn Valley, Cal.

All green food should be fed during the forepart of the day. They can have all they will eat up clean, providing there is a variety of other food given during the day.

Caponizing.—Where is the art of caponizing practised? I would like to see the operation gone through. I think it makes poultry raising more profitable. I saw many capons in the old country.—P. S., Dewar, Iowa.

Address William H. Wigmore, 107 South 8th St., Phila.

Turning the Eggs.—When running an incubator, should the eggs be turned after they commence to hatch? I have an incubator, and it does very good hatching.—T. B. S., Shedd, Ore.

The eggs should not be turned after the eighteenth day.

Scaly Legs.—I bought four Langshan pullets that are diseased on the legs. They have thick scales and hard knobs like warts and the legs are greatly swollen. What is the best remedy?—J. B. W., Sioux City, Ia

They are suffering from scaly legs. Make an ointment of equal parts of melted lard and kerosene, and bathe the legs every night until the scales fall off, when the swelling will naturally decrease.

Age of Pullets.—I have some Brown Leghorn pullets that were hatched July, 1892. Will they do for breeding by about the first of May?—C. P., Jamestown, Mich.

Yes.

Look Out for Bain.—1. Is the Mutual Poultry Company, New Concord, Ohio, reliable? 2. Is a poultry paper published in that town?—J. D., Winchester, Ind.

1. There is a possibility of the notorious, Bain being connected with the "Company." Look out for him. 2. We do not know of any.

Moulting Twice.—Why do hens moult a second time? I thought it was caused by giving too stimulating food, but I know of hens that have not been fed stimulating food at all, and they have done the same thing.—W. H., Burlington, Canada.

Oily food, such as linseed meal, sunflower seeds, etc., if given too plentifully, will cause the second moult. So will feather lice, which gnaw at the root of the feathers causing them to drop out.

White Ear Lobes.—I would like to know if the Barred Plymouth Rock hen should have white earlobes? A party here has pullets with such earlobes. Are they pure?—O. R., Clinton, Wis.

The earlobes should be red.

Indigestion.—What was the matter with my hen? She was sick five days and then died. Her droppings were green at first, but turned white. She was in good condition otherwise.—G. T. B., Franklin, Ind.

It probably was indigestion, caused by too stimulating food, or a cold.

Inbreeding.—I bought a trio of White Wyandottes and they appeared all right, but the chickens raised have a little white in the ear lobes. Is it a defect, and can I breed it out?—C. P. S., Bedford, Ind.

It is a defect, caused by inbreeding. It can be bred out by securing a male from an entirely different strain, and mating to the pullets.

Shipping Crate.—1. What would be the best hauper or crate in which to ship chickens to market a distance of between 200 and 300 miles? 2. Is the cross of Hamburg on Leghorn a profitable one for eggs?—J. M. S., Waukon, Iowa.

1. A light frame enclosed with one inch wire netting would be the best. 2. The cross would give hardy birds and good layers but it is doubtful if they would give as many eggs as either of the breeds in their purity.

Moulting in Fall.—Will chickens hatched in February or March moult in the fall of the year hatched?—G. B. M., St. Joe, Mo.

Yes, they are liable to do so.

Duck Hatching.—In hatching duck eggs, must I have more moisture than with hens' eggs? If so, how much, and how applied?—G. W. C., No address.

Not as much is required, as a rule.

Shanghais.—Will you kindly inform me where a trio of the old fashioned fowls called the Shanghais can be procured.—E. S. B., Faribault, Minn.

The Shanghais are not bred now, the Buff Cochins, perhaps, taking their place.

Feathered Legs.—Do you know of a breed of fowls resembling the Light Brahmas in size and color, but without feathered legs? I don't like feathered legs.—W. K. R., Franktown, Va.

The White Plymouth Rocks come the nearest.

Crossing.—What result might I expect by crossing Partridge Cochins with a Brown Leghorn cockerel?—C. W., Circleville, Ohio.

You would get a quicker maturing bird than the Cochins would be, as well as good layers.

Packing Eggs to Ship.—What is the best way to pack eggs to ship?—E. H., Wilmington, Del.

Pack in barrels, using only clean, dry wheat chaff, or finely cut straw. Do not use barn sweepings, clover tops or oats chaff.

Several Questions.—1. Are chicks hatched in an incubator larger than those hatched from the same kind of eggs under a hen? Or, are they stronger? 2. How many kinds of lice are there; I have been troubled with several. 3. Some of my hens sneeze; is it a cold or roup?—G. D., No State.

1. No difference at all. 2. There are different kinds of lice, the worst of which are the red mites, the large gray louse and the feather louse. 3. Your chicks have a cold, and now is the time to attend to them. Put a tablespoonful of kerosene in a gallon fountain of drinking water. A teaspoonful of castor oil would also do them good. Our Dec. 1891, has about a dozen illustrations of lice.

Maturity.—I have just heard that it takes Langshans eighteen months to come to maturity. Is that so?—M. O. M., Lowell, Mich.

It is wrong. They reach maturity at twelve months of age, or earlier.

GUINEAS IN THE FIELD.

Guineas do not scratch, and if given the liberty of the farm will cost almost nothing for their keep and pay well in eggs. It takes about a dozen of the eggs to weigh a pound, but they are rich in quality and much sought by those who know what a guinea egg is. The flesh is dark, and the fowls do not sell well, but they can be consumed on the table. Their value consists in the work they do in the fields. They are very industrious and active foragers, hunting worms, bugs and eggs of insects. They are noisy around the house, to which some do not object, and give notice of the approach of intruders. They are not polygamous, and usually mate in pairs, and for that reason a flock should consist of an equal number of both sexes.

TWENTY-FIVE DOZEN EGGS PER DAY.

S. J. BISHOP, CHESHIRE, CONN.

There was a slight mistake in my last article, where it reads "If one can secure eggs enough from May 1st to Feb. 1st," etc. It should have read "from Nov. 1st to Feb. 1st."

The two hundred chicks I mentioned that were doing so well, when three weeks old came to grief, or, at least, part of them did. They were hatched in New Jersey, taken from the incubator early on Monday morning, put in a basket of feathers and sent by express. I did not get them until Tuesday night, when I found the noisest, hungriest little band imaginable. Only two were dead, which showed the possibility of shipping chicks a long way in cold weather. They did well for some three weeks, when some of them became blind. There are many ups and downs in the business, and as I stated in my last, this is the first winter I have had anything like satisfactory success. It is very disappointing when you look for an egg to find none, but if, instead, you find two, it is different.

My four years have been, in a great measure, experimental. When I first entered the business I was uncertain which branch in it would pay best—ducks, broilers, turkeys, eggs for market—or if it would pay best to keep part, or all. I was also very doubtful as to there being much money in any part of it, but at present I feel pretty sure of myself, provided no sweeping disease, like cholera, comes in. This winter I have had a good supply of eggs, not from all of my flocks, but from my best White Legborn producing stain. One flock of near a hundred did not lay five eggs per day all winter. They were not of the *laying kind*, and the building was cold and damp. At present (Apr. 1st) we are getting twenty-five dozen eggs per day. The local price is not very high, to be sure, —twenty cents,—yet, as the feed costs less than two dollars, I do not complain, as I do not keep less than sixty in a flock, with every convenience for feeding, watering and gathering the eggs; the care of them occupies but a little time each day.

Some one may wish to know how many birds it requires to lay three hundred eggs per day. Well; we have about six hundred, yet, as more than two-thirds of them are just common hens, with no inbred laying qualities, and also many of them are two or three years old, we consider they are doing fairly well. Next season, with the same number of thoroughbreds, I will get at least 400 eggs where I now get 300.

MOISTURE? OR NO MOISTURE.

DR. WALTER R. SANDERS, DERRY, N. H.

Bro. Jacobs, I have read with interest the articles on moisture in incubators, and how we disagree. Last year, the first time I ran my incubator, I did not put in any moisture till the eighteenth day and then not over two cupfuls in all. I got eighty-five chicks from 175 eggs, with fifty dead chicks "fully grown" in the shell. Why didn't they hatch? I asked the question and was answered, that I used too much moisture.

This year I have filled the machine twice. The first hatch, I got sixty-three chicks from 175 eggs, and seventy-five fully grown dead chicks in the shell.

The second hatch, I got practically the same, sixty-five chicks from 150 eggs. The heat was not above 104 degrees nor below 100 degrees at any time, except when I turned the eggs, and then it only went down to about ninety-seven degrees for a short time.

In these last two hatches I did not open the ventilating tube at all, and neither did I put in any moisture.

In both these hatches there were from sixty to seventy-five full-grown dead chicks in the shells. Why didn't they hatch?

I have a fine regulator on the incubator, and it kept at 102 degrees during the two days they were hatching, and I did not open the door once during the hatch. I run it in my cellar where the temperature is very even. I am filling the incubator again, and shall put in moisture on the eighteenth day, as I have given it two fair trials without moisture, and got fewer chicks than when I used some.

The chickens from my first hatch are four weeks old. I only lost three, and they were hatched late and were weak. As soon as they were a week old I gave them ground bones for their dinner every day, about a pint at a feed. I feed them five times a day, till they are six weeks old. After my next hatch with the moisture I will report results.

[We will have to keep up the discussion, Dr., until we get at it. The readers seem to be all interested.—ED.]

CAN MAKE 500 HENS PAY.

J. W. DUNN, ELIZABETH CITY, N. C.

In replying to the inquiry of Mr. J. H. Hawkes, Cherokee, Iowa, the 21st ult., I will say that a building 15x15 feet is not sufficient room for 500 fowls. I would suggest one of 32x150 feet, and then run a hall through the middle, three feet wide, and divide each side into rooms 10x14½ feet each, which will make you thirty rooms. Then divide the 500 fowls into flocks of sixteen or twenty to each room, and give each flock a good yard of not less than 10x200 feet. The fowls will average 120 eggs per year. I have never found any advantage in keeping a male with hens when eggs were the object in view. Eggs will be superior when no male is used, and will keep longer, and the hens will lay quite as well without a male. I could make a fair living with 500 hens, and it would require all of my time to give them the necessary care and attention. I would think the locality mentioned by Mr. Hawkes would be good, as Milwaukee would be a good supply market. Malt is a splendid food, and, with a bone cutter, I could feed very reasonable, and get a good return in eggs. When I was in Michigan I had a building with roof of tar paper, with sides or eaves three feet and the animal heat was so great that water in the drinking trough never froze during the whole winter. This ventilation idea is all a farce. Make your house as close as possible and *keep it strictly clean*, using plenty of lime, and let "cranks'" talk go in one ear and out of the other. I am now an invalid, the result of a gun shot wound received at Fair Oaks, Va., on the 31st of May, 1862, while a private of Co. E., 93 P. V. I go only in a wheel chair. If my experience with poultry is of any benefit I willingly will give it.

[If Mr. Dunn, who is an invalid "on wheels," can write so encouragingly, it holds forth strong inducements to others.—ED.]

IMPROVING POULTRY.

Of all places to raise poultry successfully, the farm comes nearest to being the ideal place of all. Nature furnishes the greater part of the food in the shape of bugs and worms and other insect life, and green stuff growing wild, and the seeds of other grass and weeds. Then there is plenty of gravel and bits of bone to aid digestion and furnish lime for egg shells. They have a wide range which is conducive to health, and do not demand half the care that poultry does on a small city lot. But these same city poultry-keepers realize a handsome profit from their chickens in spite of all disadvantages. They usually keep only pure bred stock and get fancy prices for eggs and birds. Why can not the farmer's wife or daughters, with everything in their favor, be just as successful? Of course, the men of the family have no time to meddle with such "small concerns," but many women in the North and a few in the South are engaging in the poultry business and making a success of it; not just earning a little pin money, but some of them have respectable bank accounts.

The great trouble on most farms is, there is already a large flock of the common poultry on hand which cannot be disposed of, all at once, to any advantage. I would not advise disposition of the old stock at first, but keep them to furnish eggs and broilers for home consumption, and make separate runs and a small house for the new stock. If one does not feel able to begin the business on a large scale, purchase a trio of birds to start with, and enough poultry netting to make a secure yard to keep them, in which is also a house to roost and lay. In making the yard, put two boards next the ground with the netting above. Then clip the left wing of all your fowls and they cannot fly over. Select a half dozen of the best common hens and put in the yard with the pure stock, but be sure to remove them when they begin laying if the eggs of the two kinds cannot be distinguished, for all the eggs of the pure bred must be saved for hatching. Also, hatch the eggs from the mating with the common hens, which will infuse new blood into the common stock. In one year's time, if rightly managed, a paying flock of thoroughbred poultry can be established at no great expense. The cost of the original trio and the netting should not exceed ten dollars.

One must be governed by their own fancy in regard to the breed to select. If the idea is to get eggs and care not so much for size, select a trio from the numerous family of Leghorns or other light weight breeds. The Buff Leghorn is the fashionable breed just now of all the egg-producing family, and there are none that make a handsomer appearance, unless it be the White Leghorn, with erect comb, white ear lobes and yellow legs. But if size is preferred, with a fair share of eggs also, get a trio from the family of Plymouth Rocks, Langshans, Brahmas or other heavy breeds. As a rule, large, heavy-weight fowls do not lay the number of eggs that the smaller fowls produce. The White Plymouth Rock is a handsome family of fowls and well established.—*Patsy Shamburger, in Home and Farm.*

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Scribner's Lumber and Log Book, Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks (Jacobs).

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

VOL. X. PARKESBURG, PA., JUNE, 1893. No 3

CONTENTS.

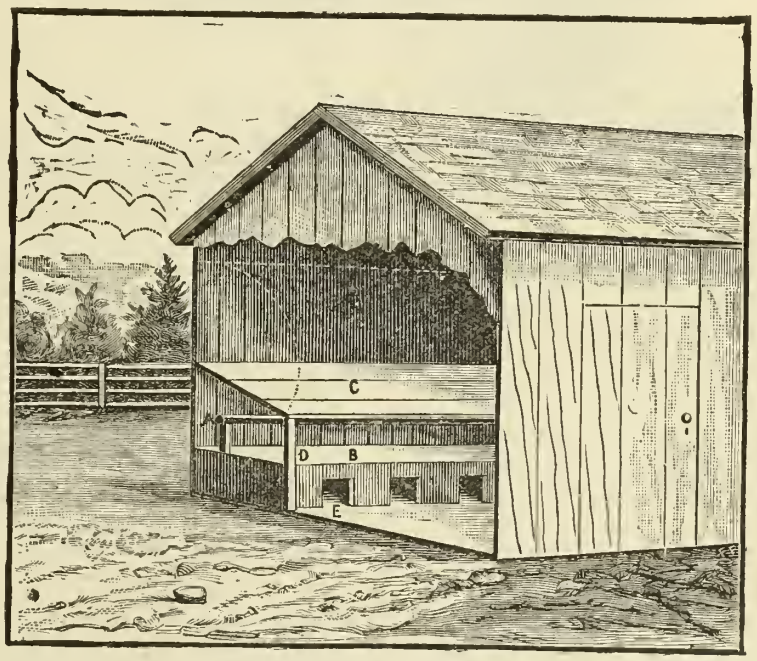
Poultry House With Protected Roost (Illustrated)—The Washington State Association—A Chicken Fraud. 33
Bones and Clover—Two Story Poultry House (Illustrated)—Why Some Hens Hatch Well—Purchasing Hens for Laying—Bones and Bone Meal. 34
The Daisy Bone Cutter (Illustrated)—Lice-Proof Roost (Illustrated)—Inquiries in Homœpathy—Selling the Broilers—Symptoms of Disease. 35
Poultry-House, Pigeon-Loft and Sheds (Illustrated)—Clover as a Special Food—Glutting the Market—Estimating the Profits for Poultry—Common Fowls—Fattening the Fowls—Feeding in Troughs—Cholera in Turkeys and Pea-Fowls—Red Pepper for Poultry. 36
Fresh Eggs for Incubators: Guineas—How Monstrosities are Produced—A Farmer's Poultry House—A Lady's Experience—A Remedy for Lice—Rose Comb Black Minorcas—Drinking Vessels for Young Chicks—A Good Hatch—Comparison Can't Beat It—A Good Drinking Fountain—Roosts and Platforms. 37
"The Score Card Teaches Nothing"—Baby Biddies and Brooders—What Was Done the First Trial—What His Hens Have Done—Economical Feeding—Changing to New Feed—Infertile Eggs—Brief Remarks from Readers: Preventing Gapes—Bowel Trouble—Full House—Complete and Reliable—Rupture of the Reproductive Organ—Fed to Keep Warm—Hooper's Condition Powders—Color of Young Chicks. 38
Brief Remarks from Readers: Seventy Per Cent—Poultry in California—The Moisture Question—Poultry on Town Lots—All Men Equal—Likes it Best of All—Corn Feeding—Granulated Oatmeal—Equalized the Heat—Big Laying—Sandy Soil—Left the Eggs Alone—Hen Was Too Fat—Cured Crop Bound—Worth a "V"—It Must Be Studied—A Good Beginning—Butter and Eggs—Poultry in Canada—Cuts Jack Rabbits. The Cost of Dressing Fowls—Are Heavy Weights Desirable?—A Foolish Prejudice—Managing for Eggs—Swelled Heads and Sore Eyes—Thieves in the Yards—Sandy Soil the Best. 39
Editorial Items—The Canadian Poultry Review—Incubators and Brooders—The Shows This Year—Kentucky Getting Ready—Bound Volumes—Prosperous—Nebraska Makes an Appropriation. 40
Poultry for Profit—The Poultry Keeper Specials—Cooking an Egg—Nitrogen in Grains—A few "Five Cent" Books—Experiments in Keeping Eggs—Sadly Off—The New York State Poultrymen—White Sports—Scenes from Every Land. 41
The Brooding Question—Could Not Make Them Lay—Eggs With Rough Shells—Poultry Yards—Double-deck Houses—Huge Eggs—A Flock of Cannibals—Caponizing and Notes Thereon 42
The Roup: What Is It?—Condition Powder Test Leg Weakness in Hens—The Homœpathic Remedies for Roup—The Ducks Had Cramp—This Shows for a Large Flock—Round or Square Roosts—The Hen Must. 43
Look Out for Him—Sulphide of Carbon for Lice—Using Insectides—Cure for Chicken Cholera—Eggs are Cash—That Sleepy Disease—White on Langshans—Fowls for the Table—Oat Patch by the Hen House—A Vermin Preventive—An Acre of Hens—Lice—Ducks as Mothers—Egg Testers. 44
Condition Powders—Feeding Useless Roosters—Poultry on a Small Area—Raising Chickens on Farms—Good Black Color—Guinea Fowls and their Value—Advertisements. 45
A Batch of Questions—Which is the Best Breed—What to Do When Hatching—Advertisements. 46
Advertisements. 47
Bureau of Information—Feeding Fowls by Electricity—The Origin of Poultry—Bad Flavored Eggs—Publisher's Department. 48

KEEPING POULTRY DROPPINGS.

We would not advise keeping the droppings separate from other manures at this season, as the warm weather is not favorable, but mix them with the barnyard manure. Winter is the time to save the droppings, as then they will be more valuable, coming from matured stock. The manure from growing animals or birds is not as valuable as that from those which are matured, and as labor must be bestowed on the proper preservation of droppings now, they can be made more serviceable in the general heap or by immediate use.

POULTRY HOUSE WITH PROTECTED ROOST.

It is very difficult to construct a poultry-house that serves for both winter and summer, but in the illustration the object is to show a cheap and convenient mode of protecting the fowls, when on the roost, in winter, and also to give them the benefit of the cool air in the summer. The figure shows a winter protection against draughts of air. A is the roost, which extends across the poultry house, and rests on the platform B. A hinged door (or any kind of arrangement preferred) is attached to the wall. This door, C, may be raised up and fastened to the wall, as shown by the dotted lines, or may be lowered so as to rest on the post and rail, on the edge of the platform. This post is shown at D. The nests,



POULTRY HOUSE WITH PROTECTED ROOST.

E E E, are under the platform. The space between the floor of the platform and the hinged door gives an opening across the house for the fowls to go on or off the roost. As soon as the weather becomes cold, it is only necessary to lower the door and the roost is ready for winter, the fowls being warm and comfortable. When the warm weather approaches, raise the door and the work is done.

THE WASHINGTON STATE ASSOCIATION.

On March 4th the Washington State Poultry Association was organized in Seattle, with about sixty charter members, many of them being the leading business and professional men of Seattle and other cities in the young State of Washington.

The Association starts off with bright prospects, and expects to hold a grand exhibition every year, in some section of the State, and all members can vote, whether they attend or not. The Executive Committee decides when and where the show is to be held, as well as the annual meeting, the members voting at the election of officers, new members, etc. In fact, the country members, who may not be able to attend the meetings, have an opportunity to express their views and cast their votes. Each county in the State has a vice-president, and a member of the Executive Committee for every five members.

The following officers were elected for 1893, or until the next annual meeting: President, D. M. Shanks, Seattle; Secretary, John D. Mercer, Port Townsend; Treas., G. W. Ashford, Seattle; Superintendent, A. P. Randall, Seattle; Vice Presidents, Sidney W. Cobb (at large); R. A. Nims, Chehallis Co.; Geo. C. Hatch, Clallam Co.; W. J. Dowling, Columbia Co.; Mrs. G. M. Calligan, Island Co.; E. F. Plummer, Jefferson Co.; F. T. Palmer, King Co.; W. H. Scearce, Kitsap Co.; Walter Adams, Lewis Co.; A. E. Grafton, Pierce Co.; J. E. Farrell, San Juan Co.; E. F. Cassel, Snohomish Co.; J. A. Kirby, Thurston Co.; John A. Peebles, Spokane Co.; L. J. Stillmant, Walla Walla Co.; E. T. Vernon, Whatcom Co. Executive Committee (King county): J. W. Clise, N. Wallingford, J. H. Rengstorff, Rev. Clark Davis, F. W. Carter, J. H. Allbright and J. A. James. For Jefferson county, C. J. Andrews and Wm. Dodd. Auditing Committee, N. Wallingford, A. P. Randall and A. A. Plummer.

The Association admits only life members, the membership fee being $5, with no further dues. No salary is paid to any one, and the expenses are very light, the printing of the annual proceedings being the only large expense, consequently the Treasurer will have a nice sum from new members each year, and if the Association is managed on good business principals it should show a handsome balance on the right side at each annual meeting.

The Association is composed of fanciers who have the welfare of the feathered tribe at heart, and among the members are some of the members of the A. P. A., as well as of the Buff Leghorn Club, Langshan Club, Indian Game Club, etc. Members are admitted from all parts of the State and at la ge.

All who live in that section of the country should join. Write to the Secretary, Mr. John D. Mercer, Port Townsend, Wash., who will give full details. Mr. Mercer is well known on the Pacific coast; is a leading breeder, and is also just the man to push the Association to the front.

A CHICKEN FRAUD.

"A unique plan which it is claimed was operated in obtaining money with little effort was disclosed yesterday by the arrest of Everett C. Lake, of Canton," says the Cleveland (Ohio) *Leader*. "Lake was brought to this city by United States Deputy Marshal A. B. Ackerman, in compliance with a secret indictment handed down in the federal court. The charge made against him was that of using the mails in pursuance of a scheme to defraud. By his scheme, it is asserted, Lake was coining money at a rapid rate. The alleged method of procedure, as brought to the attention of the United States officers, seemed quite innocent. The following advertisement was inserted in a sensational newspaper: "Money. Send ten cents for particulars. Fortunes quickly made." This plain little "liner" circulated through the country and caught the eyes of readers. Those who felt inclined, sent the ten cents for particulars. In response they received a letter telling them that the scheme could not be fully understood without the forwarding of an illustrated circular by the originator. This circular would cost fifty cents. The letter also contained assurances that the half had not yet been told. Soon the fifty-cent piece found its way into the hands of the fortune-maker, and the victim waited anxiously for the arrival of the illustrated circular. When at last the circular arrived, it was found to contain pictures of various kinds of poultry with the prices of each variety marked underneath. There was little satisfaction in this. Should the person receiving this circular decide to try the last resort and send the price of the fowl he desired he would receive a small and ordinary chicken which he could foster and care for in the hope that some day it would lay a golden egg. Deputy Marshal Ackerman captured a large number of letters in the house of Lake. Lake was considerably surprised by his arrest, but appeared composed as he sat in the United States court room quietly reading a newspaper.

If you wish a binder, so as to preserve your copies of the POULTRY KEEPER, we have a special one for that purpose. The price is sixty cents, postpaid It is just the thing, as each copy of the paper should be saved. You can put each month's issue in the binder as fast as received.

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

BONES AND CLOVER.

Under the above heading we reproduce two articles that once before appeared in the POULTRY KEEPER, and we do so in order to give our new readers information in regard to the two most valuable of all egg-producing foods—bones and clover. The first is

GREEN BONES AS FOOD.

Green bones—that is, fresh from the butcher—cannot be surpassed as poultry food. They are easily procured, are much cheaper than meat, contain a larger proportion of the elements that enter into the composition of eggs than any other material, as they are more concentrated.

Ground dry bones have long been on the market as poultry food, and they have served the purpose intended; but while the poultrymen and farmers were resorting to the use of dry bones they also witnessed the waste of much better and far more valuable food every day, in the shape of more nutritious, more digestible and more highly relished fresh green bones, simply because there was no method known by which the tough green bones could be reduced to a condition to render them acceptable to poultry.

But with the advent of the mill for cutting green bones all of this valuable material is now made to form a portion of the food for poultry. The bone mill grinds the hard, dry, brittle bones but it is unserviceable in reducing green, fresh bones, as green bones cannot be ground. Only the bone cutter is capable of converting the green bones into poultry feed. The bone cutter and the clover cutter have revolutionized the method of poultry management.

What is the difference between the green, fresh bones from the butcher and those that have become hard and dry? Though a comparison of a green bone with a dry bone, side by side, will show there is a difference, yet an explanation is not out of place here. The green bone contains the natural juices (the water being a solvent) and upon evaporation the bone becomes very light. By weighing a fresh bone and weighing it again when it is dry, the difference will be found astonishingly great. The green bone contains meat, blood, gristle, oil and mineral matter in soluble condition. Upon exposure to the air, not only does decomposition occur, but the chemical changes are such as to re-arrange the particles of the bone itself. All animal substances upon decomposition are finally converted into ammonia, which is volatile, while the evaporation of the water not only liberates all gaseous formations but permits of chemical changes which convert much of the soluble material into that which is insoluble. The green bone, though tough, is soft compared with the hard, dry bone. Insects also clear away from the bones all that is unaffected by exposure to the air, and in place of the juicy, succulent green bone, rich in phosphates, nitrogen and carbon, we have the hard, dry, insoluble bone, brittle and bleached, and composed of but little more than phosphate of lime and earthly matter, all of its real nutritious matter having passed away.

The natural solvent cannot be regained or replaced. As stated above, the difference in weight between the green bone and the dry bone is caused principally by water. This water is in the blood, in the adhering meat and renders the bone soluble to that extent. You can never restore this solvent after the bone is dry. The natural solvent may be removed, but during the process a chemical change occurs. When we mow green grass and convert it into hay, we simply evaporate the water, apparently, but the solid matter is also affected, for if we again wet the hay we can soften it, but not change it again to the green grass condition. We have, in curing the hay, changed its texture, re-arranged its particles and much of it that was entirely soluble and digestible in the shape of green grass, now abounds in indigestible woody fibre. The natural solvent therefore when removed, changes the whole physical structure of the substance, and this is what occurs when a green bone becomes dry.

The value of all foods depends upon their digestibility. The green bone, containing its natural juices, is digestible, especially by birds, and when in a very fine condition it is also digested by animals because its particles are less dense; but the dry bone having lost its solvent agent, has become harder, its particles re-arranging closer together, and is only slowly digestible, if at all. Bear in mind that it is not the amount of food eaten that gives the best results, but the amount digested. Nothing will make a chick grow as rapidly as will green bone—in fact, the growth seems marvelous. There are several bone cutters now in the market, and they are all that is claimed for them. The object of this is to impress upon all who keep poultry the necessity and importance of utilizing the waste materials. Eggs are always cash in the market, and especially in winter. Bones are more plentiful in winter than are some other valuable materials. The bone cutters are labor saving; they permit the use of valuable bone, and they pay back their cost in short time.

There are many things which cannot be explained, but which present themselves as facts. Take a bone, fresh from the butcher, go in your hen yard, pound the bone with a hammer on a stone, and although you may have fed your hens on dry ground bone and have filled their troughs with grain, each will take the risk of a blow on the head with a hammer to secure a bit of fresh bone, and they will swallow pieces so large as to occasion surprise. The fresh bone serves a special purpose, for it contains the materials for the white of the egg, the yelk and the shell, all in a concentrated form, and in a partially soluble condition, while the dry bones will remain untouched—that is, as long as fresh bone is supplied. Thus we have not only egg food, but also grit for grinding the grain food in the gizzard.

The cheapness of bone is another factor to be considered—many butchers give them away, or will sell them for a small sum. But the bone cutter is the agent that renders them valuable and converts them into the most desirable of all foods. With bone and cut clover, but very little other food will be required, and hence there is not only a gain in nutritious matter, but a saving of grain also.

CLOVER AS A SPECIAL FOOD.

The man who would feed his cow grain, with no hay, and expect her to yield largely of milk, would be considered as deficient in the knowledge necessary to secure from his cow all that she is capable of giving. The blunders of poultrymen are worse, for they require the hen to perform more service, proportionately, than the cow, and allow her fewer opportunities for fulfilling that expectation.

At this enlightened day the farmer feeds his soil with special fertilizers for particular crops, and separates his beef-producing breeds from those that yield largely of milk, and even draws a distinct line between the wool-producing and mutton breeds of sheep. He feeds his soil and his stock for special purposes, but he leaves his hens to derive from grain that which is not in the grain, and without which his hens are unprofitable.

But the poultryman progressed to a certain extent when he made use of the bone-mill, and his profits were further increased when the hens were recognized as entitled to comfortable quarters in winter. Now the poultryman has discovered that he can no more feed his hen on grain alone than he should his cow, and he also finds that it will be only one-half the expense to feed hay and grain to hens than grain alone, with more eggs as the result, and the hens keep in better condition.

The hens can secure a large quantity of green food in summer, if they have range, but when there is no longer an opportunity for them to do so, we must supply them something for that purpose. It is the *bulk*, the material for reducing the concentrated form of grain food, that is required. Grain contains some elements that are essential, and the use of grain should be continued, but in feeding grain it should be used to supply any deficiency in the bulky food, and to *balance* the ration, so as to render it a complete egg-food. To be plain, you should feed for eggs, and not for fat.

The hens often fail in providing the shells for their eggs, especially, if fed on grain. Why is this? Simply because over one hundred grains of lime are needed for each egg, in order to produce the shell, the bones of the chick, etc., and as 1,000 pounds of wheat or corn contain less than a pound of lime, the hen cannot secure the lime. Just think of it! One must feed a *ton* of wheat in order to furnish the lime for ten dozen eggs. Yet, with this deficiency, the hens are condemned because they cannot produce something from nothing. Fortunately, we have learned that the best food for hens is *hay*. Clover (red or white) is best, but we can feed corn-fodder, meadow hay, timothy, or any kind, but clover is preferred. While half a ton of corn or wheat produces less than a pound of lime, white clover contains over thirty times as much, and red clover about twenty-eight times as much. Clover will supply all the lime the hen requires, and as a flesh former and albumen producer clover contains eleven per cent. and corn a fraction over ten per cent. It is, therefore, equal to corn or wheat, pound for pound, as a flesh-forming, nitrogenous food. Corn, however, contains eighty-six per cent. of heat elements, and clover thirty-five per cent. Of the phosphates, clover contains seven times as much as corn, ten times as much sulpher, ten times as much magnesia, four times as much soda, and fully as much dry matter. With so complete a food as clover hay (one especially adapted for producing eggs), is it not plain that for years back the farmers have been feeding hens in the most expensive manner, and depriving them of the very food most essential for their success? Mr. Francis A. Mortimer, of Pottsville, Pa., who keeps 2,000 pure bred fowls, and who feeds scientifically, states that had he known of the clover hay food for hens four years ago he could have saved $1,000, and that since he began its use he finds fewer sick hens, more eggs are laid, the males are more vigorous and potent, and the eggs hatch well.

Unfortunately for the hen, she *pulls* her food from plants. Give a hen a mess of clover hay, thrown into her yard loosely, and she cannot eat it. She must have one end of the stalk fastened to the ground, as she cannot pull off the leaves if the stalk yields to her efforts. She can go into the field and pull from the standing grass, but after it is cut she cannot eat it, except at the risk of swallowing pieces several inches long, which may cause her to become crop-bound; but if the hay is cut into short lengths she can pick it up the same as she does corn or wheat.

Clover hay may be cut fine and fed dry, but the proper way to prepare it is to cut it in the afternoon. At night scald it in a tub or bucket, by pouring boiling water over it, throw a cover (old carpet or anything) over the tub, allow it to stand all night and in the morning will be still warm, and possess a savory odor that will almost tempt you to eat it yourself. To every bucketful of dry cut hay, add one quart of the following mixture: Ground corn, ground oats and bran, ten pounds; linseed meal, one pound; salt, one ounce; mix well. Feed in a trough, and give the hens all they will eat, twice a day. Each hen will walk away when she has eaten all she wishes. The bucket of dry food (scalded at night, as mentioned) will feed about thirty hens and perhaps more, and they will relish it highly. No other green food will be necessary. A gill of wheat may be scattered in the litter, so as to induce the hens to hunt and scratch.

Then comes the cutting of the clover. Those who keep stock and have the regular fodder cutters, will find it difficult to use them for cutting the hay for fowls, as it should be cut in half-inch lengths. If too long, as stated, the result may be crop-bound. Fortunately, the discovery that chopped hay was the best food for laying hens has led to the invention of one of the neatest, handiest little hay cutters that can be imagined. It is so small that it can be almost carried in an overcoat pocket; can be attached to a table or bench in two minutes (only two screws used), and it feeds itself. By simply giving it the hay, the cutter draws it in, chops it and pours it into a bucket or other receptacle. It is not only convenient for farmers (as one cannot cut the hay longer than half an inch), but just the thing for poultrymen and those who live on the suburbs who do not keep other stock. The cost of the little machine is almost nothing compared with its usefulness, as it will save the cost in food in a short time, and save labor also. It is easier to chop the clover than to mix grain, and the machine is so strong and simple that it is almost impossible to get it out of order. It is self-sharpening, and cuts all kinds of hay.

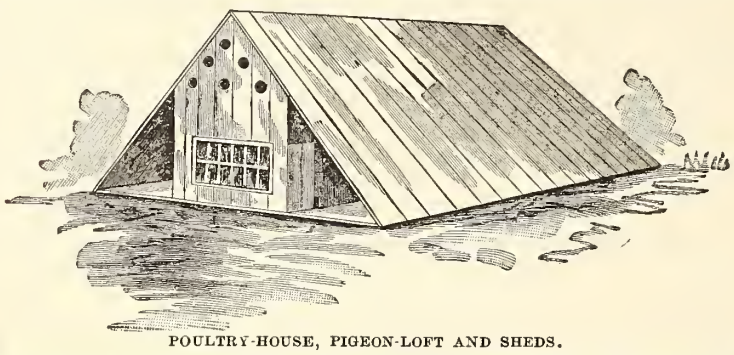
Green grass, being watery, is not cut so easily, as grass sometimes clogs, but even green grass can be cut in the machine if the accumulations are swept off. As a labor-saving, cheap, handy, useful little machine the hay cutter is a valuable discovery. Everyone who keeps fowls should have one, and after you have it you will wonder how you ever got along without it.

There is no substitute for chopped hay. It is not only rich in nitrogen, lime, sulphur, phosphoric acid, magnesia and soda, but also abounds in potash and carbon. Balanced with a small quantity of grain, the heat and warmth of the body is secured and the elements of egg production provided. Being bulky, it is easily digested and assimilated, and thus by *diluting* the concentrated ground grain, renders the grain itself more digestible and of greater value—furnishes all the mineral matter desired—avoids over-fattening (as from grain alone), the great scourge of the poultry man, as excessively fat hens will not lay, and soon become worthless.

Lime for the shell cannot be secured from ground oyster shells, chalk, marble, etc., (all carbonates of lime,) as such minerals are insoluble, and only serve as grit. The lime in clover hay has already been prepared, ready for assimilation by the hen, through its combination with vegetable acids, and every one hundred pounds of clover that is digested provides three pounds of soluble lime, that has been prepared by nature herself for immediate use. No material will serve as food that cannot be dissolved and passed into the blood, and through the blood to the egg.

Buy a cutter. It means cheaper food more eggs,—eggs that will hatch strong chicks—healthy hens, vigorous males, less labor, smaller loss and larger profits. The cutter is now an essential portion of your outfit. If you cannot buy one, borrow the money to do so. It will save its cost with a large flock in less than a month.

In the above is shown the *why* and the *how* of bones and clover as special foods. They are the cheapest of all foods, and they produce the most eggs. No poultry farm is complete without a bone cutter, and it is safe to claim that the clover cutter should be with the bone cutter. Poultrymen are learning that grain is only partially a food for poultry, and that no food is complete of itself.



POULTRY-HOUSE, PIGEON-LOFT AND SHEDS.

POULTRY-HOUSE, PIGEON-LOFT AND SHEDS.

A poultry-house, pigeon-loft and open sheds can be combined under one roof and the cost be but little. The design is given to show a house for two flocks of hens, the doors to the roosting apartments being on the sides, under the sheds, with an entrance hole near the bottom of the door. The window may be of one sash, but the partition of the roosting-room should be arranged so as to allow one-half of the window to be used for giving light to each apartment. The upper portion of the house may be used for pigeons. The sheds may be open at one end only, or at both ends, but it is better to have one end open and the other end closed, with a small window at the closed end. The sheds are intended as resorts in severe weather, to allow the hens to exercise. It will be noticed that the boards form both the sides and the roof, thus entailing but a small cost. The house may be of any desired size, but sixteen foot boards, elevated so as to allow twenty feet of space width on the ground, will allow each roosting apartment to be four feet wide and each shed to be six feet wide.

ESTIMATING THE PROFITS FOR POULTRY.

But few persons consider the profits from poultry by comparing them with the capital invested, hence the result is that many are not satisfied though a large profit may have been derived in proportion to the investment made. When a flock is fed with the refuse from the table the hens are capable of appropriating and saving that which would otherwise be wasted, and though in fact an expense has been incurred, as the refuse possesses a certain value, but the hens provide a market for it and permit of its being exchanged for eggs. In such cases the hens perform a double service by acting as scavengers and giving a profit also. Others who keep larger numbers and purchase feed, really make a large profit from what may be supposed has been very nearly a loss. If a flock of twenty hens give a gross return of $25 ($1.25 each) and an expense of $20 has been incurred in feeding them, the profit of $2 seems but a very small sum, yet it is twenty-five per cent., and is more than is usually made in other pursuits. True, there is labor to be performed, but it requires only a short period daily, and the larger the flock the less labor required, proportionately. When all the facts connected with the expense of keeping poultry are considered, it will be found that a profit is often made when least expected.

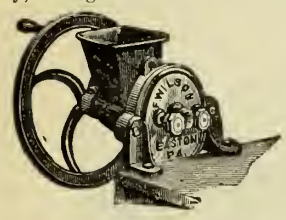
COMMON FOWLS.

The term "common fowl" sometimes applies to very good stock. At the present period, since much improvement has been effected, it is not easy to draw the line between the common and the good. A cock of any of the pure breeds may improve a whole flock, and raise it in value and quality above the average of the previous season, yet the flock not being *pure*, will still be classed as common. All crosses or grades are also placed in the common class and especially when the flock is made up of several breeds. Now, a common hen may really be a well-bred hen. She may be a cross of two breeds and combine characteristics not to be found in any of the pure breeds. It is because many of the common flocks are made up of good strains that some persons consider that there is no advantage in the pure breeds. The truth is, it is the blood of the pure breeds from whence is derived the superiority and excellence. We venture to affirm, however, that where the genuine old-fashioned dung-hill is kept, the record will not compare with that of the grade. But the dunghill is nearly extinct. Our breeders have done a great work, and even the common fowls are improved.

THE DAISY BONE CUTTER.

We give illustrations of the Daisy Bone Cutter and the No. 1 Bone Mill, manufactured by Messrs. Wilson Brothers, 43 Delaware street, Easton, Pa. This fi m has been in existence for twelve years, and was the first to make mills for grinding bones, their oldest patent being obtained in 1881. Since that time they have secured other patents, the last one being in January, 1893. Their mills have been sold in almost every part of the globe, from the smallest hand size to the largest power mill, weighing four tons, and grinding forty tons of bones per day, taking in "the whole hog," if it may be so expressed.

The Messrs. Wilson have long been known to poultrymen, and the firm is one of the most reliable in the country. Their little "Five Dollar Mill," for grinding dry bones, oyster shells, grain, etc., for poultry, having been received with a royal

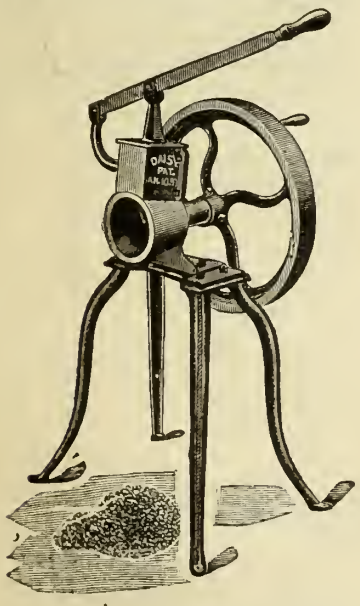


WILSON'S NO. 1 BONE MILL.

welcome, and hundreds are in use. It is one of the most compact little pieces of machinery made, being strong and durable. Although known as the "No. 1 mill," yet its old familiar name of the "Five Dollar Mill" will always stick to it. It *grinds* dry bones, while the Daisy *cuts* green bones.

There is also a "Five Dollar Family Grist Mill" made by the Messrs. Wilson. It weighs only thirty pounds, and is especially made for grinding graham flour or corn meal for table use. It can also be adjusted for cracking the grain if desired. It is a valuable implement to have in the kitchen, as you can have fresh graham or corn meal when wanted. This mill is not to be compared to those made on the old style coffee mill principle. The grinding surfaces are of very hard material especially made for this purpose and are ground off perfectly true on emery wheels, and will last for years. The shaft is made of steel and will not bend or break.

Those who attended the New York and Philadelphia shows were no doubt impressed with the working of the Daisy Bone Cutter, which sells for $15 without



WILSON'S DAISY BONE CUTTER.

the stand, or $18 with it. It is, as its name implies,—a daisy. It is especially made for cutting green bone with meat on, right from the butcher, or offals of bone and meat from the table; also cuts vegetables, scrap cake, etc. A glance at the illustration shows at once the principle on which the cutter works. The knive can be taken out when dull, sharpened and replaced in a few minutes. A large or small bone can be cut up at once. Very little pressure on the lever is required. The cutter is always ready for work. Turns easily, cuts fine and fast. It is simple in construction, nothing to get out of order. Can be turned by hand—or power, by running a belt on hand wheel. Capacity, by hand, one-half pound per minute; by power, sixty pounds per hour.

Their No. 10 mill, which weighs 2,300 pounds, price $350, requires twenty horse-power, and bones can be shoveled right into the hopper. This mill will grind *raw bones, green or dry*, without any preparation whatever. The breaking and regrinding are done in the same machine, which saves the cost of two, and with the automatic feed for regrinding, it runs with very little attention, and ample provision has been made in these mills in the way of arranging a weight which operates directly against the burrs so as to allow any iron to pass through without injuring the mill to any very serious extent. The burrs are of the *hardest* material, and the shaft, of steel. They furnish with each mill four extra sets of burrs, in addition to the Screw Feed Burr for regrinding, without extra charge. The breaker burrs break the bones up to about the size of corn grains, at the rate of from five to eight tons per day of ten hours (the feed arrangement is removed when the bones are being broken), after which the fine burrs are put into the mill, and the bones previously broken are thrown into the hopper and run through the fine burrs, which grind them into meal at the rate of about three tons per day. New burrs can be duplicated at a small cost when worn.

And right here we will give their recipe for *making your own phosphate*, which may be valuable to some of our readers: Take a large tub or barrel and put into it 100 pounds of water; add very slowly and cautiously forty-three pounds of pure sulphuric acid. You must be very careful while handling this article not to let it touch your skin or clothing, as it will instantly blacken the skin and destroy the clothing whenever it comes in contact; when mixed with water it generates a very intense heat. Into this mixture throw 100 pounds of ground bone. The sulphuric acid instantly attacks and enters into combination with the bones, reducing them to a pasty condition and completely dissolving them. Four days in the acid will reduce them. Keep under cover, and stir occasionally while the process is going on. When completed, dump out the whole contents on the barn floor and thoroughly work into the mass four times its bulk of dry bog earth or dry road dust; mix and pulverize completely with a wooden shovel. The bog earth acts as a dryer, rendering it easy of uniform distribution. This manure is the most powerful fertilizer in existence, and, made by these directions, the cheapest, as one ton is equal to thirty-two tons of barn yard manure. For top dressing for grass lands, use 300 pounds per acre; for corn, potatoes, beans, turnips, etc., apply 450 pounds to be harrowed in; for wheat, rye, oats or barley, 400 pounds per acre, in the drill, mixing with the soil, or harrow in the soil.

Their improved Farm Mill, No. 3, weight 300 pounds, price $60, will grind *raw bones, greasy or dry;* also corn in the ear and small grain. *Is the most complete mill for the farmer.* The burrs are held in place by weight and lever, same as the large power mills. The burrs are so constructed that it is not necessary to run the bone through the mill more than once, grinding it fine the first time. Capacity, from 600 to 1,000 pounds of bones in ten hours; grain five to twelve bushels per hour; can be run with a one, two or four horse power. Every mill guaranteed to work satisfactorily. This mill is just the thing for making superphosphate on the farm, as well as grinding bones for food. It is very cheap, considering its uses.

Their No. 7 Bone Mill, price $150, grinds raw, green, or dry bones, and also corn, cob and grain, and their "Oriole" Farm Grist Mill, price $25, weight 150 pounds, can be operated by hand or power. Its capacity is five to eight bushels per hour, and an extra set of burrs is furnished with each mill. It grinds corn meal and graham flour fine enough for table use.

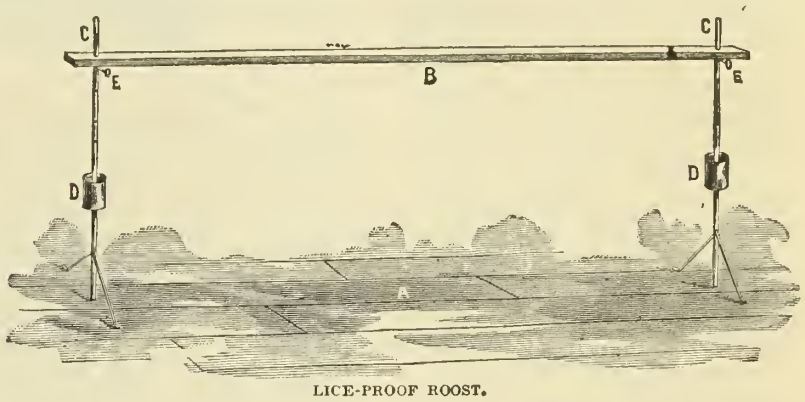
Messrs. Wilson make a *special business* of bone and grist mills, and have a reputation second to no other house in the country.

THIS paper is only fifty cents a year, but it is worth fifty dollars.

IF you have not had the bound volume for 1892 you can get it now.

LICE-PROOF ROOST.

A roost that serves to protect the fowls from lice, sent us by S. H. French, Ardmore, Pa., is shown in the illustration, in which A is the floor, B the roost (made of 2x3 scantling) and C C iron rods or wooden posts as preferred. Half-inch iron rods are better, as an old fruit-can may be attached (see D D) by being soldered to the rods, the tops of the cans being open. These cups are kept half full of coal-oil or crude petroleum. The rods are made to pass through the ends of the roost, and the roosts may be raised or lowered by moving an iron peg (E E), a few holes being drilled in the rod for that purpose, or the roost may be lifted off when necessary. The roost should not touch the walls of the house. The roost is a protection against lice, and may itself receive an application of coal oil occasionally. It may be of any length desired, and should not be very high, as the lower the roost the better for the birds in jumping on or off. It will save our readers much hard work and annoyance in summer.



LICE-PROOF ROOST.

INQUIRIES IN HOMŒOPATHY.

30. Some of my young turkeys become droopy and do not follow the rest to the fields. Their heads become pale and they have a sickly look. Have given them carbolic acid in their food and in their drinking water. J. S. W.
Gardenville, Pa.

Stop the carbolic treatment and give China 3. If they do not brighten up within a week give Ferrum 30. Be sure they are not lousy. At night by strong light look on their heads, under and on outside of their wings, and if lice are seen, dip the finger in kerosene and moisten, *slightly the down* on the head, throat and wings and replace under their mothers.

31. The heads and throats of my chickens swell and their eyes water. What can I do for them? E. C. R.
St. Louis, Mo.

Belladonna 3 seems to be indicated in this phase of what is commonly called roup. The sick birds should be kept apart from the flock, in clean, sunny quarters not exposed to the winds.

32. Some of my fowls mope about for awhile and finally die. Upon examination after death their livers are found to be greatly enlarged. What is the remedy? H. M. H.
Letcher, South Dakota.

Mercurious Iod. 3 will probably be useful in this and like cases.

33. A number of flocks in this vicinity have been afflicted with diarrhœa. Please give remedy. Mrs. J. G. K.
Granger, Iowa.

For diarrhœa in hot, dry weather give Bryonia 3; for diarrhœa following a cold, wet spell give Dulcamara 3.

34. My young turkeys are dying rapidly of a disease like catarrh, that closes up their nostrils and compels them to breath through the mouth. They cough and strive to clear their heads without effect and after a few days die of suffocation. J. W. C.
Scottsville, N. Y.

Try Spongia 15 for a week, and if not effectual give Mercurius Corrosive 15. It is well in such cases to clean off the hard scab from the nostrils and anoint with lard.

35. Our fowls first get lame in one leg and in a few days in the other. They eat well, look well and to all appearance are healthy, but cannot walk. J. S. F.
Island Station, Col.

Give Rhus Tox. 3, or Ledum 3.

36. Tell me what to do for chickens that drink lots of water and then die right away.
Herrickville, Pa. D. H. P.

Give Arsenicum 6.

37. My laying hens have the following symptoms: They seem to want to vomit all the while, a white froth runs from the mouth and they have diarrhœa. W. A. K.

Arsenicum 6 seems to be indicated.

38. A blindness seems to be coming on some of my hens gradually. They appear well otherwise and will eat when I hold the food up to them. L. T.

Probably Sulphur 30 will clear up the difficulty. This remedy acts best in the higher potency.

39. My hens have the following symptoms: Hiccough, wheezing, one eye closed with watery discharge, small tumors form near eye and nostril and in some cases the mouth is affected. Have used red pepper in food, carbolic acid in drinking water, also copperas and assafœtida, and have fumigated houses with tar and sulphur and whitewashed them. After all this I find new cases every day. G. W. L.
Rancocas, N. J.

This seems to be a form of roup, and for this disease nothing has a record equal to Spongia 15.

In all cases use remedies as directed above.—*Farm Journal.*

SELLING THE BROILERS.

The best prices are obtained at certain periods of the year, and for particular sizes and weights. Early in the year, the demand is for the smallest chicks that can be used, those as small as half a pound sometimes being called for, but the three-quarter pound sizes are mostly preferred. They begin to come in demand about the middle of February, the old hens holding the market at low prices until nearly up to that period. As soon as the supply of adult fowls begins to diminish and the prices increase, a slight demand begins for very early chicks, which seem to take the place of squabs, and the prices are then often very high, sometimes reaching $1 per pound, while fifty cents is considered not up to the average. As the season advances the larger sizes are in demand, those from one to one and a half pounds being preferred, with prices higher per pound the smaller the chick. April, however, is the best month for high prices, one-pound chicks often bringing seventy-five cents each, but between one and two pound weights are mostly desired. The demand is very great when asparagus is in season, and the prices continue well up until June, but usually begin to decline about the first of May. Of course it is very difficult to successfully raise chicks to a marketable age in winter, but it is for that reason that the prices are usually high, and if only half the brood can be saved they will pay for the labor.

SYMPTOMS OF DISEASES.

Many of our readers, in writing us, describe the ailments of their birds and then ask what the disease is. In order to assist them we will give the symptoms of the following diseases. Remedies are being given in each issue, but we append a few also.

Cholera is known by great thirst, pale or black comb, nervousness, an anxious, wishful appearance, greenish droppings, debility and rapid prostration. Give a tablespoonful of a mixture of ten drops carbolic acid in a gill of water, mix all their food with such water, and add a tablespoonful of concentrated tincture of red oak bark to the food for ten fowls. Give the acid water once a day, in the morning and give a teaspoonful of a mixture of a tablespoonful of the red oak bark tincture in a gill of water, at night. If preferred the acid and red oak bark tincture may be added together, in a gill of water.

Roup shows discharge at the nostrils, very foul odor of the breath, sometimes hoarse breathing, and loss of appetite. Give a warm, dry place; inject two drops, daily, of a mixture of one part water and one part bromo-chloralum in each nostril, and give the bird, once a day, in a teaspoonful of water, two grains bromide of potash and one grain of quinine.

The above are the two principal contagious diseases. A healthy bird always has a bright scarlet red comb.

FATTENING THE FOWLS.

When the hens have ceased laying and are to be marketed, select those that are to be kept over, place the others in a small yard and allow them a comfortable roost at night Give them plenty of water and gravel, feed four times a day, and keep the coop and yard very clean. What you desire is to get them fat in the shortest time possible, for if they are confined too long they will lose weight instead of gaining. Especially is this the case with turkeys. Ten days is long enough to keep them up, and as soon as they begin to lose appetite, send them to market. Induce them to eat by changing the food frequently, which is better than the French method of cramming them. The early morning meal should consist of boiled potatoes, made thick with corn meal, fed warm. During the day, keep grass before them all the time, and feed wheat. At night, give whole corn and let them fill their crops full. Every other day give corn meal mixed with sour milk, with a little charcoal in it. As fowls can be fattened very quickly in this manner, much time may be saved, and they should be shipped so as to arrive at their destination in good condition, as many persons take great pains to fatten their fowls, but ship them in coops destitute of any conveniences for feeding and watering them, thus losing some on the journey and failing to realize the best prices.

FEEDING IN TROUGHS.

A feeding trough has no place in a poultry yard, and although it has been in use, perhaps, for centuries, it is time that it be abolished. A hen should never be fed grain in any form unless she is forced to hunt and scratch for it. If a trough *must* be used it should be only for soft food, given early in the morning, and in quantity only to half satisfy. The great damage done by keeping a trough in the poultry yard consists in the inducement on the part of the poultryman to keep food before the fowls all the time, which is a great detriment to egg production. When the hens are allowed to walk up to the trough at will and help themselves, they have nothing to do but to eat, the consequence being that they become as fat as seals, and will not lay. During the day the hens should be fed sparingly, so as to keep them constantly searching for food, but at night they should be given all they can eat. A hen soon becomes debilitated when overfed, breaking down prematurely, laying soft-shell eggs, and having no disposition to do anything but sleep. One-half the difficulties in poultry keeping are due to overfeeding; not that the hens should not be fed liberally, but that they should never be fed so well that they are not willing to receive more, and to hunt for it, also.

CHOLERA IN TURKEYS AND PEA-FOWLS.

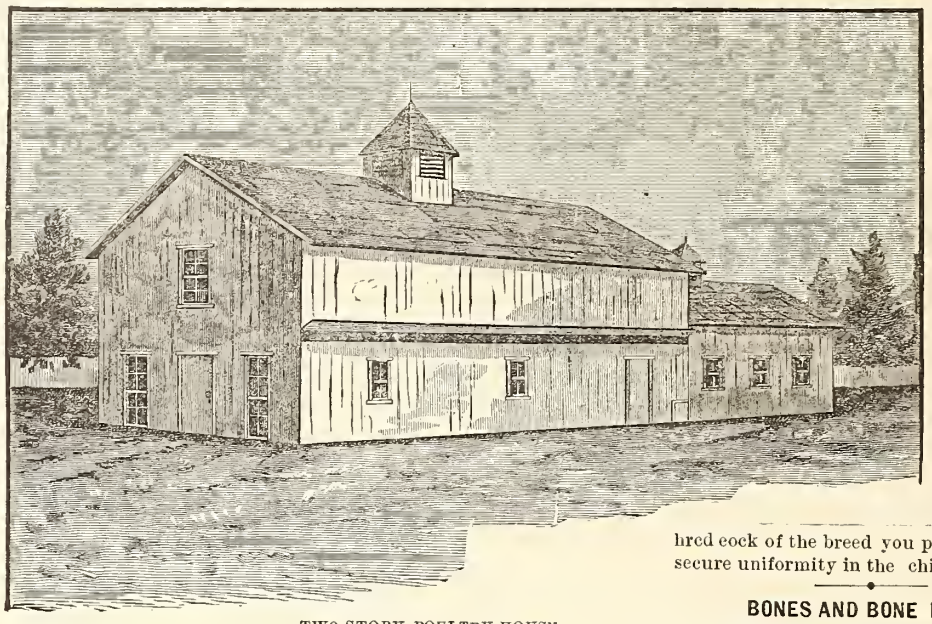
The turkey and pea-fowl will not eat if taken with the cholera, and hence it becomes difficult to treat them, as they must be forced. The cholera makes sad havoc in a flock of either kind, being more dangerous with them than with hens. The best remedy is carbolic acid. Add twenty drops to a gill of water, and with the water mix together meal and shorts, slightly parched or browned, and force a tablespoonful of such soft food down their throats twice a day. Give no water to drink at all. If it is given, however, add ten drops of the acid to each gill of water. Keep the sick birds in a dry, warm place, and separate from the others.

RED PEPPER FOR POULTRY.

Red pepper should never be given in large quantities. The practice of putting red pepper in all the soft food should be discarded. The best effect from its use is when it is given once or twice a week, and half a grain for each fowl is sufficient. If given constantly the birds become habituated to its use, and it then does more harm than good. It is only a temporary stimulant and serves best when the birds are not in full health. Sulphur should also be given cautiously. The best regular tonic is the Douglass mixture in the drinking water, and it is cheap, costing about five cents a gallon, composed of one pound copperas, two gallons soft water and an ounce of sulphuric acid, a teaspoonful being added to each quart of drinking water.

GLUTTING THE MARKET.

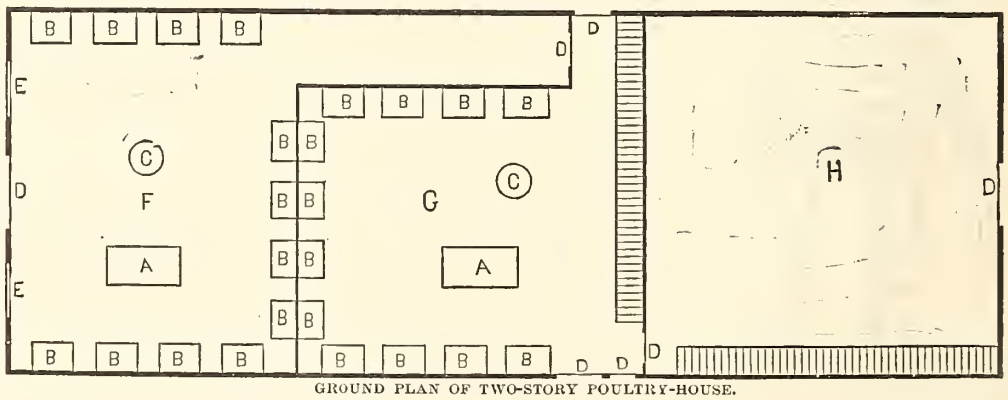
In a month or two the annual glut of the poultry will begin. But this alludes to inferior fowls, and the low prices are due more to the mismanagement of the shippers than to any other cause. There is never a "glut" of first-class, choice stock, properly cooped and sent to market in an attractive manner. If 100 birds are crowded into a coop that should only hold half that number, and in a condition which prevents them from eating or drinking, with filth all under them, they will find the market full. But although prices are usually low at this season, there are plenty of buyers for the choice birds.



TWO-STORY POULTRY-HOUSE.

TWO STORY POULTRY HOUSE.

The design of the poultry house illustrated in this issue is from Mr. Henry Price, Kenton, Ohio, and in describing it he says: "I believe it is a model house, and may be built of any size. The main building is 15x30 feet and the back building 15x15 feet. At first I had stationary boxes, and eggs could be taken out without going in among the hens, but when once I got lice in the house, I saw the folly of stationary boxes. I then used boxes like illustration, which hang on the wall, or may be on the floor. If the box gets lousy, carry it outside and burn the straw and refuse right in the box, as it is made of wire. The dusting-boxes are shown at AA (ground plan), and CC are the water dishes, BB, etc., the nest-boxes and DD the doors. The perches are on the upper floor, which is made of matched boards, and slanting to the front side of the elevation, where the droppings roll out, or may be swept out, through an opening running the whole length, and which may be closed by a board or door on hinges."



GROUND PLAN OF TWO-STORY POULTRY-HOUSE.

WHY SOME HENS HATCH WELL.

The following will explain the reason why some hens make good hatches while others do not bring off a single chick. As with the incubator, the good and bad hatches depend upon the kind of eggs. The extract below is from the N. H. *Mirror*. It says:

Why is it that some hens hatch but a few chicks while other hens bring off full broods? It has been supposed that the fault is with the hens, but a hen that may fail at one time may do well at another. We must look for the cause beyond the hens, and for that purpose we conducted some experiments at different periods of last year.

Taking eggs, from an incubator, that had been tested after four days incubation, we placed a dozen fertile eggs under one hen and a dozen infertile eggs under another. The one with the fertile eggs, after the fourth day, began to come off frequently, due to the animal heat of the eggs, which raised the temperature so high that the hen was compelled to cool them, while the other hen having eggs that must be heated by herself only, remained closely to her nest. We then changed the eggs, giving the first hen the eggs that had been given to the second hen, and to the second hen were given the eggs that were in the nest of the other. The conditions being reversed, the first hen remained closely on the nest while the other was compelled to cool her eggs. This experiment was made with several lots of hens.

The conclusions are that the hen is governed entirely by the temperature of the eggs, and that she will not expose her eggs, unless compelled to do so by hunger, if there is insufficient warmth, but that if every egg contains a chick, or a majority of them are fertile, the animal heat of the bodies of the chicks in the eggs will cause the heat to rise above that required for incubation, just as happens with an incubator. Of course, there are some hens that are contrary, and others that are driven from the nest by thirst, hunger, vermin, fright, or some other unfavorable condition, but the chicks assist to hatch themselves after the tenth day, and the hen regulates her conduct as much by the conditions affecting the eggs as by her individual inclinations.

We have before discussed the above subject in this journal, but present the extract because it gives the whole matter in a few words. Hatching does not depend so much on the heat imparted by the hen as by the generation of animal heat in the eggs. One egg helps to hatch the next; the greater the number of fertile eggs, the better all of the chicks will hatch. The same applies with the incubator.

PURCHASING HENS FOR LAYING.

When you wish to add to your stock, be careful to select from well-known yards, as you may easily bring both lice and disease into your flocks. To examine the hens, first look at the comb, which should be a bright scarlet red, thus indicating health. The legs come next, and should be free from scales or scurf, and clean in every respect. If the wings are cut, you may safely conclude they are good flyers, and if the males have long spurs, you may know they are aged. Look carefully on the bodies for lice, and if the birds are in a coop, notice the droppings, which should be of a mixed color. If the hens in the coop move about quickly and the combs are bright, you will have passed over one-half the points of selection, as health is the first object. Select those that are heavily feathered and with as small combs as possible, as they will stand the cold weather well, and do not take any that are moulting. Never buy the cock with the hens, but first procure your hens and send off for a pure-bred cock of the breed you prefer, and thus secure uniformity in the chicks.

BONES AND BONE MEAL.

For laying hens, bones that have been coarsely ground are excellent, as they are digested and used as food. They provide the necessary phosphates and also lime for the shells to a certain extent; they also contain a proportion of nitrogen. Bones, when sharp, also serve as grit for masticating the food in the gizzard, thus rendering a service as well as providing the materials for the the production of eggs. For very small chicks, bone meal is better, and the finer the bone meal the easier it is digested by the chicks. Some persons buy the ground bone, sift it, use the coarse part for hens and the finer parts for chicks. Fresh bones are much better than bones that are dry, as they contain a certain amount of meat and gelatine. Bones are very cheap, considering their value, as the hens will not eat a very large quantity at one time, but if fresh or pounded bones are broken to sizes that can easily be swallowed, the hens will consider them quite a treat and consume a large quantity. They can be broken much more readily when heated in an oven.

The introduction of new breeds of fowls is only a temporary benefit, unless care is taken to breed them with purity or to cross only with design for a specified purpose, and then killing all these crosses as soon as their purpose is accomplished. A great majority of complaints that hens do not pay come from those who years ago used crosses, and have continued to breed from them. Their progeny are poor layers, subject to disease and are generally worthless. Returning to pure blooded fowls is the only resource of those whose flocks have got in this condition.

Subscribe for the POULTRY KEEPER.

FRESH EGGS FOR INCUBATORS.—GUINEAS.

MRS. A. L. SMITH, PRINCETON, INDIANA.

I want to echo Dr. Walter P. Sanders' communication. He tells the story just as I would do it. I have had about the same experience in regard to the moisture and the keeping of regular heat. I used one incubator for seven years, and thought if I would get one of the new machines, with all the late improvements, I would not be troubled with chicks dying in the shells when fully grown, but all the same trouble. I do hope experience will discover what is the cause of the incubator chicks dying this way. If the chicks that hatch out were weak, then I would think it was because of the artificial incubation, and that only "the survival of the fittest" came out, but those that do come out are strong and vigorous, grow right off and do well. I thought I would try one experiment, and that was to date every egg as layed, and I noticed that the majority of the dead eggs were the older dates. When we set hens we usually have a setting of fresh eggs, but in using incubators, we have to save up the eggs for three weeks, while the others are incubating, and though they are turned and cared for, yet it might be that the chicks are weaker and are not able to pip the shell, but I would like to hear from others, as I do not lay much stress on this theory until I would experiment more on this line; and until we discover how to prevent this mortality of full grown chicks in the shells, incubators are at a discount. I intend using one, if I only get fifty per cent., as I can then get my work done sooner, and with less trouble, though with the sacrifice of a large number of eggs.

An item in the last POULTRY KEEPER in regard to guineas, saying that their flesh was dark, and that they do not sell well, applies only to the pearl guinea. The flesh and skin of the white guinea is as white as chickens, and they are very early layers. My guineas have been laying for a week or two, before the first week in April. They also breed well where there are a number of females with one male. Last year I had about one dozen females, and three or four males. They did their own hatching, late in the season, and some of the hens would come up with ten, twelve or fifteen young ones. As I did not want to raise many, I took all the eggs I could find, except from three or four, and they, with some I missed finding, raised over sixty birds, as fine ones as I ever saw. We have had guineas to eat, and I have sold a number of pens, and have plenty left to raise from. They are great foragers, and get their own support, and are good friends of the farmer. Every orchard ought to have a flock of these handsome birds. The restaurants like to get them as a substitute for wild game, which they resemble in taste.

HOW MONSTROSITIES ARE PRODUCED.

A. W. K. KING, AURORA, ILL.

Noticing "A Great Curiosity" in a recent issue of the POULTRY KEEPER, I wish to state that such things have happened before. I will try to explain how such monstrosities are produced. In the first place, an egg yelk, separated from the hen's ovary was fructified as ordinarily. The egg was lowered into the duct, and enveloped by the albumen (the white), and sinking lower still by the calcareous protecting shell. But, instead of being laid as ordinarily, the egg was detained in the duct for some reason unknown to me. It is probable that this may have been the first effort of a young hen, or one of the first ones; or, again, an egg produced by a very fat hen, obesity very often causing inability to lay the developed egg, especially with Cochins and Brahmas. The fructified egg being detained as described, had reached, in consequence of the blood heat at which it was kept in the duct, a certain stage of incubation, perhaps the sixth or seventh day; so I judge from Mr. Sanford's letter. At that stage, the egg shell having become soft again, the egg freed itself and was laid by the hen. So much with reference to Mr. Sanford's experience.

I was repeatedly called upon to bring about with hens the artificial delivery of eggs from the duct. In some cases the egg is carefully drilled by the operator and broken. Then a small quantity of olive oil is injected, whereupon the hen usually succeeds in ridding herself of the debris. As before stated, Brahmas and Cochins are much inclined in this direction. These two breeds suffer also from diseases of the ovary in general. I am sorry not to be up in the English technical expressions in poultry matters, but having published one poultry paper in the Russian, and one in the German language, and having kept up to one thousand head of various, and I may say of nearly every known domestic poultry, I have quite a little experience in such matters. I could relate to you some operations which I repeatedly and successfully performed on poultry, and of which I have never heard or read anything in American papers.

[We will consider it a favor if Mr. King will favor us again with his experience.—ED.]

THE *Practical Dairyman* and the POULTRY KEEPER, both at one price—seventy-five cents.

A FARMER'S POULTRY HOUSE.

E. W. SINCLAIR, FAIRBANKS, ARIZONA.

I noticed in several numbers of the POULTRY KEEPER, plans of cheap poultry houses, so I thought I would send you a short description of a new poultry house I built recently. It is a farmer's poultry house, where the hens have a free range, so it is only for roosting and laying in, and to be safe at night. It is eight and one-half feet wide by seventeen and three-fourths feet long, with a double pitch roof (a single pitch roof takes more lumber, and is not so neat to the eye). I have the roof to project sixteen and one-half inches over the side walls, which are six feet high. The side sills, if I may call them such, are 1x12 foot boards, with 1x3 pieces nailed to the lower edge to stiffen it. Then there is a space of nine and one-half inches, and a 1x3 strip, the whole length with 2x2 or 2x3 studding two feet ten inches from centre to centre, on which four foot lath are nailed and then covered with Neponset paper. As the paper is three feet wide, the studding is put so that the paper will lap one inch, with a strip of lath over the joint. After the paper is on, a lath is put on outside, midway between the studs, and nailed from the inside through each lath, and clinched on the outside. The roof is a little less than one-quarter pitch, so as to make a four foot lath and one cut in two, or six feet of roof on each side, give sixteen and one-half inches projection. The nest boxes are made of five gallon coal oil cans, and are on the outside, so the eggs can be collected without going inside, a hole being cut on the end of the building so the hen can enter the nest from the inside of the house. The roof lath run straight up and down, and on the sides and ends two inches apart, the half length going next the ridge, and the long length projecting. The paper is cut to run from the one cave up, over and down the other, and lath nailed over the seam or joint, and at the eve. I used three-penny steel nails. One 500 foot roll of paper, 600 lath and 250 feet of lumber were used on the job, and there is enough paper left to make it twenty feet long if two good windows would be put in, instead of two little ones. There was also a ventilator in the centre of the roof, 9x9 inside, and a damper to close to make it tight when fumigating with coal oil and sulphur.

I see in the March number that Carman & Griffin ask if there is a drinking vessel that small chicks can drink out of without getting wet. I can give a plan that I am using: It is a tin trough, one inch wide and three-quarters of an inch deep, and two or three feet long, and hung against the side of the brooder or pen, one and one-half or two inches above the floor. We have 108 chicks feeding and watering in these troughs, and have not seen a wet chick. We give boiled milk with a little black pepper in the forenoon, and clear water in the afternoon, besides oatmeal mush from the table, and bread and milk, and boiled wheat.

A LADY'S EXPERIENCE.

W. M. WELLS, READING, PA.

Having received the POULTRY KEEPER for April, and back numbers sent for, I would say that they are well worth the price of subscription. As a practical guide it has no equal. A lady friend has an incubator, similar to the Poultry Keeper, which averages, during the winter months, thirty per cent hatches. Although she does not get more than thirty-five chicks from 100 eggs, she raises nearly all that she hatches. The eggs are bought at market, which I suppose would account for the small number coming out. The brooding house is a frame building, with glass front, facing south, ten by fourteen feet in dimension, and there is a brick furnace, with coil of pipe connected to radiator in a heater, made of one inch boards, 3x9 feet, and four inches deep; tubes from the heater box run under the movable hovers. The runs are 3x6 feet, and the space taken up by the heater is filled with sand, which is renewed weekly. This lady has been very successful, having sold chicks in February, nine weeks old, that weighed one and a quarter pounds; and in March, when three months old, at two pounds and over. The last two seasons there are cases of gapes which we cannot account for. There are old carpets, used under the hovers, which are washed daily. There are no lice on the chicks. The sand used is taken from the hill, and never used twice. The only cause we can attribute the gapes to is the worms which we find in the sand. She tries to prevent the chicks from feeding on them, but with all the care taken they manage to find some. Our cure is the horse hair, which seldom fails.

A REMEDY FOR LICE.

CHAS. J. REICHE, CHESTERTOWN, MD.

I see the inquiry in your April issue for the best remedy for killing lice. I sweep my house every morning, and sprinkle the floor with coal ashes. The inside of the house is lined with tarred paper, and some of the paper is also put in the bottom of the nests. I also put insect powder in the nests of the setting hens, about four days before the hatch is due. I have just had two hens come off with twenty-three chicks, and you cannot find any lice on them.

ROSE COMB BLACK MINORCAS.

GEO. H. NORTHUP, RACEVILLE, N. Y.

When my attention was called to the fact that Mr. Theo. Campbell, of Lexington, Ky., was claiming, through the columns of the POULTRY KEEPER, to have originated Rose Comb Black Minorcas, I was greatly surprised and more so when I read his claims, for some of them directly contradicted what Mr. Campbell himself had written me, and what he claimed in his advertisements. I believe that I was the first breeder of Rose Comb Black Minorcas in the world, and as yet the only one who has succeeded in getting Rose Comb Black Minorcas of both sexes without cross-breeding. I also believe that I was the first to mention the breed in print, and the first to exhibit Rose Comb Black Minorcas at a show, which I did at Gloversville, N. Y., December, 1891. There were ten fine birds in the lot that I showed, three of them old birds, one of which was a hen two and one-half years old at that time. I have the description of Rose Comb Black Minorcas, which was published in the February number of *Poultry Monthly*, printed together with an additional history of the breed, which we will send to any POULTRY KEEPER reader who will send a stamp for it, or you may publish it in the POULTRY KEEPER. It will fill two or three columns. But to return to Mr. Campbell's article, in which he says that he has for years been experimenting, and has produced by scientific breeding and careful mating, a Rose Comb Black Minorca, but that he has neither birds or eggs for sale. Now, you will see that he advertises on page thirteen of the same paper (POULTRY KEEPER for April), second column, and seventh advertisement from top, "Rose Comb Black Minorcas and Golden Wyandottes. Eggs fifty cents each." In the *Southern Fancier*, published at Atlanta, Ga., he also advertises R. C. B. M. eggs, but here he prefers to pose as an importer rather than as an originator. His advertisement appears in April number, 1893, on page 323, first column, second advertisement and reads, "Rose Comb Black Minorcas, Imported Stock, Eggs fifty cents each." In a letter to me, dated April 12th, 1893, Mr. Campbell refers to the last mentioned advertisement, and says that it "is not for the purpose of making sales but to bring the best and most practical fowls on earth before the public." In the same letter he says that his strain of Rose Comb Black Minorcas were bred from "a cockerel sport having a rose comb." But in his article in the POULTRY KEEPER of the same month that his letter to me was written, he says, "This fowl is not a sport, as the writer does not believe in such freaks."

DRINKING VESSELS FOR YOUNG CHICKS.

E. W. TALLANT, COLDSPRING, MASS.

I see in your March number a request from Messrs. Carman and Griffin, Charleston, Ill., for a vessel out of which young chicks may drink and not get wet. I should like to describe what I use, with good success.

Take any tin pail that does not leak (a fruit can will do if you can get the top edge perfectly true and level), discard the cover and bale if any. Then take a tin plate that is one and one-half or two inches larger in circumference than the top of the pail or can, and measure the depth of the rim on the plate; then get the same distance from the top of the pail down the side, and at a point a little less than that distance (say one-eighth of an inch), punch a hole through the side of the pail. The size of the hole does not matter very much, only be sure not to get it too large. A good sized awl, or the point of a shingle nail, is large enough.

Then fill the pail with water, place the tin plate over it, and, pressing it firmly to the pail, quickly invert the whole thing. Set it in a pretty level place, and if the hole has been made in the right place you will find between the pail and the brim of the plate, a nice little trough of water, into which the chicks can get nothing but their bills. The trough will not run over, nor the supply give out so long as there is any left in the pail. Gallon vessels are large enough to handle conveniently. I use this system until the chicks are pretty well grown, and when there is danger of its being knocked over, I place a flat stone on it.

A GOOD HATCH.

J. T. KENNEDY, PALO ALTO, MISS.

I made an incubator by plans sent, and am well pleased with it. I have just hatched 168 nice, healthy chicks from 258 eggs put in the machine without testing. This I think good, especially when taking into consideration the severe and sudden changes of weather during the time of the hatch; sometimes freezing, and perhaps the next day warm enough to be comfortable without fire. A neighbor of mine, using an "improved patent machine," hatched at the same time 126 chicks from 212 eggs, being about fifty-nine per cent., which was about seven per cent. less than my hatch with the POULTRY KEEPER machine. I find that by using an extra drawer, with solid bottom and glass front, it makes a No. 1 brooder—a run being attached to the front of the machine for feeding, etc. Of course, it could not be used as a brooder if another hatch is to be started right away. I am using mine as a brooder, as the chicks will be two or three weeks old by the time I am ready to start the machine again.

COMPARISON CAN'T BEAT IT.

O. F. PHILLIPS, AMO, INDIANA.

In an editorial in March number of POULTRY KEEPER, under the heading "Comparison Can't Beat It," the editor comments on the scoring of some Brown Leghorns, said to have been exhibited by me at the recent Indianapolis Show, and uses the supposed difference in the score cards to pommel the innocent little card upon which the "honest" judges recorded their work—upon which the worthy editor *does not mean to reflect*. I have no idea from what source the information (?) was obtained, but I *do* know that the article was so erroneous that in justice to the judges, the cards, the novice and myself, the article demands notice and correction.

In the first place, the cockerel referred to was *not* a Brown Leghorn, but a Barred Plymouth Rock, and the sole cause (presumably) of the great difference in scores, was the shade of color, a difference which would have existed in just as great a degree had the bird been judged by comparison.

Again, the pullets said to have averaged three points higher by Pierce than by Barker, actually scored just two-eighths of one point higher on the average.

Now I never yet saw a reason for attacking the score card that could not be given with equal force against comparison. Birds may, and do, meet in competition at one "comparison show," get their ribbons, and at the next show the awards are reversed, or perhaps the former winners are knocked out entirely. This is often the case under the same judge. If you want to fight, fight *causes* and not results. Place the blame where it properly belongs, and work where you can do good.

Make a Standard that does its own interpreting, and compell judges to follow it or disqualify them. There are many reasons why judges do not and cannot judge alike. The first reason is on account of the Standard not being explicit enough. Then, a bird will not show up the same at two different times. Place it in a show coop, or on a barrel, or in any other unnatural position, and to one judge it may show a squirrel tail, and in ten minutes, under another judge, may show a tail all right in shape. Even the tendency of men not to see alike two different times has to be considered; and all apply with as equal force to comparison as to the score card.

Now, I will say, for the benefit of the "novice," that the first prize Brown Leghorn cockerel at Indianapolis was scored by judges Pierce, Barker and Hewes, and varied only one-half point from highest to lowest, and condition was accountable for this slight variation. Furthermore, the winning pullet at the same place scored the same by both Pierce and Barker. Verily, there *is* education in this for the novice, and—"Comparison can't beat it."

[Thanks. We got our information from a letter written by Mr. Phillips to a party in Virginia, but if we are in error it is a pleasure to be corrected.—ED.]

A GOOD DRINKING FOUNTAIN.

CHRIST BROS., ST. JOSEPH, MO.

Being subscribers to the POULTRY KEEPER, and noticing an article in which some parties would like to know of a good drinking fountain or vessel, we would say that one made as follows would answer their purpose:

Take a piece of galvanized iron, about three feet long (or any length desired), three and one-half inches wide, and bend into V shape. Solder a piece of tin on the ends, about two inches wide, at the bottom, and running up to one and one-half inches above the top of the trough. Then nail a small strip of wood, about three-eighths of on inch square, above the top of the trough by punching holes in the end pieces, leaving just space enough for the chicks to get their heads in to drink.

We have been hatching chickens with incubators for over four years, at the rate of 400 to 600 per month, from January 1st to May 1st of each year, and have lost quite a number of chicks by getting wet, until we used the above described drinking vessel; and must say that since using it, which is about two years, we have not lost two per cent. by getting wet, and never lost ten per cent. of those hatched.

ROOSTS AND PLATFORMS.

WM. H. VAN DOREN, BUCKINGHAM, ILLS.

I am often highly entertained by the correspondence in the POULTRY KEEPER of the success or failure of different plans in caring for fancy poultry, their "pets," for pets they are if properly cared for. One thing among others that I have changed are the roosts and platforms. I have roosts sufficient for the size of the house and the number of fowls. They are fastened to two cross-pieces, twelve inches apart, running about twelve inches past the last roost; and on the end a hinge is fastened to the wall and crosspiece, the front end hung in a wire or cord supported at the top of the roof. I use the floor for the platform. With a shovel and basket it is easily cleaned and you also get rid of a needless louse trap. The fowls are also farther from the droppings. The manure should be removed daily. I am delighted with this arrangement.

"THE SCORE CARD TEACHES NOTHING."

W. W. COLE, LEROY, N. Y.

I am an ardent reader of, and believer in, the POULTRY KEEPER; consider it a valuable medium of instruction, and have found the expense of advertising in its columns a paying investment. The index on the first page is certainly an improvement, for if this new feature is continued, reference to past volumes for remedies for diseases, plans of houses, incubators, brooders, methods of feeding, care of fowls, etc., can be readily found without waste of time.

We have admired the editor of the POULTRY KEEPER for one reason in particular—he has always seemed to us a champion of the novice. The columns of the paper are open to articles written for the object of instruction, beneficial to any classs of its readers. Having been a breeder of fancy fowls but three years, we consider ourselves in the novice line, and as such would like a few instructions either by the editor or others. Such instruction will benefit a large class of readers who are anxious, eager and willing to be taught how to determine the quality of any thoroughbred stock they may chance to possess.

Of course, even a novice can, by observation, learn which of his fowls excel in egg production; which seem to be in the finest general condition, and could readily choose those which to him look the most beautiful. But how is he to determine which to choose for the show room? After showing birds, if they receive no prize, either first, second or third, how is he to know if he chose approximately correct, or was entirely off the line? Our yearning for knowledge in this respect was quickened by an article in the April number of the POULTRY KEEPER, entitled, "The Mystery of Scoring." In this article it is stated that at the Columbus, Ohio, Show, held February 1st to 6th, the birds were scored. That a certain bird having been scored by the best known judge in the country, and the score card being misplaced, the bird was again scored, after a lapse of two hours. On comparing the two cards it was found that they differed three points. It is stated that the object of the article is to show that "the score card teaches nothing and misleads the novice."

Since we embarked in the poultry business we have studied the "Standard of Perfection more or less. Have occasionally endeavored to put the knowledge thus gained to a practical test, by scoring a bird that had already been scored by a competent judge, and then comparing cards. We have been congratulating ourselves on advancement made, and picturing to ourselves future world-renowned fame. But, alas, our efforts have been in vain, for here before us is the answer to our future hopes: "The score card teaches nothing, and misleads the novice."

Under our present dejected state of mind, in trying to make our way clear, the following inquiries suggest themselves:

1st. Does a judge, we will say, for instance, "the best known judge in the country," when scoring a bird, use the knowledge he has gained from the "Standard of Perfection"? If so, and he makes a difference of three points in two hours, would it be advisable for a novice to try to learn from the "Standard of Perfection" how to score his own birds?

2d. If the judge makes a difference of three points in two hours, what would be the result if he waited a week after misplacing the first card? Is three points the limit, or would the liability of difference increase in proportion to the length of time, for instance, a difference of 252 points in a week?

3d. Are such mistakes or differences of rare occurrence, or are they very common? If of rare occurrence (the best of us are liable to mistakes), then the general result of the work of judges would not be far out of the way, and the score card would, after all, be something of an educator. But these mistakes must be very common, for it states "the score card teaches nothing." Then, if we have, for instance, 100 birds scored that do not vary more than three points, the ten highest scoring birds are liable to be the poorest scrubs of the entire lot.

4th. If "the best known judge in the country" will make such a blunder, by using the score card, can he use the knowledge he possesses in any other way and come to a more perfect result, or is the knowledge itself at fault, and must he begin again at the bottom of the ladder of poultry fame, and educate himself in some different school? Is it not desirable for the novice to start in the right school? And would not the man who would start us right be a benefactor?

5th. If the knowledge this "best known judge in the country" possesses is all right, and the score card alone is at fault, is the transformation necessary to enable the man to see a bird twice alike, after a lapse of two hours, a quick or slow process? Could he make a flying switch with his knowledge on the right track, or is the change a difficult and laborious one?

The poultry business is, according to the opinion of many, only in its infancy. The army of new comers each year are the ones who will help to make its future, and are the ones who are helping the trade of those who began earlier. The competition in this, as in other things, is liable to become more as the volume of business increases. We desire to know when we have a good thing how to distinguish it from a poor one, that we may successfully compete with others. If the score card teaches nothing, could there be any written record that might be used by a judge that would educate the novice? If not, how would it do for models to be made of the successful fowls that carry away the grand specials, the models to be sold to the aspiring novice and studied at his leisure. Or the birds themselves, after having outlived their usefulness, might be carefully skinned and stuffed and used as models by those unable to possess the living specimens. This last remark is not copyrighted. I will not even offer it as a suggestion, feeling too modest to offer any solution of the difficulty. Will someone instruct us who knows?

BABY BIDDIES AND BROODERS.

E. F. FALES, AUDUBON, IOWA.

Although I do not wish to be understood as a defender of the advertisers of "delusions, snares, and life and hope destroyers" in the shape of improperly constructed brooders, yet I feel constrained to take exceptions to a remark of Fred Grundy, in an article in the December number of the POULTRY KEEPER, which you credit to the *Prairie Farmer*. In the spring of 1891 I hatched quite a goodly number of chicks, and transferred them directly to my brooder, the floor of which was good fourteen inches above the floor of the house. At one of the brooders I erected a very steep inclined plane, which almost amounted to a ladder, with a nice little hand rail or baluster. Now, they did not—after the manner of young bipeds of a higher order—slide down the baluster to the destruction of their clothing and bodies, nor yet did they very often apply their *hands* to the rail, but, like very sensible "baby biddies," in a very decorous manner, though rather nimbly, they very soon found their way down that "ladder" to the drinking fountain to slack their thirst for the first time, ere they were in the brooder two days, and they required no urging to return to the berth deck. Now they may have been a very intelligent lot of chicks, and it may have been Mr. Grundy's luck to deal with chicks not so intelligent, but mine rather seemed to like it, and would caper up and down their stairway as if they enjoyed the fun as much as beavers or boys do the fun of sliding down hill on the snow and climbing up again.

One of my pens of seven Barred Plymouth Rock pullets gave me seventy eggs in February, which is two and five-tenth per day. To the 14th of March they have given me four, five and seven per day, which I think satisfactory. Should I be satisfied with their work in February? [Yes.—ED.]

I would like to say, for the benefit of beginners in poultry raising, "if there are any here to-night," that I believe I have "broken" or cured my flocks of the vicious habit of egg-eating. I made nest eggs of plaster, mixed with carbolic acid. I also gave them the acid on the "half-shell," *i. e.*, soaked shells in the acid (crude is cheap and will answer the purpose), and put them in the nests. A few applications were sufficient.

Perhaps you can solve a little philosophical problem for me. My thermometer placed under a sitting hen registered 103 degrees, and I run my incubator last spring by it, with not the best results. This winter it has not registered so low by twelve degrees as other thermometers about town. Does the latter fact cut any figure in the hatching question?

[Thermometers sometimes get out of order, and vary after being in use. Have it tested again.—ED].

WHAT WAS DONE THE FIRST TRIAL.

MRS. J. KINNAMAN, OLEO, INDIANA.

We have given your plan a trial, and think it did boss. My husband bought an organ box. It was a good one, all tongued and grooved. We then made it by the plan, only a few inches smaller. We pounded saw dust around the sides, and where it was to go, and had a tank made of good galvanized iron. Then we filled with boiling water. After we got the heat up to where we wanted it, we put in one hundred eggs. This was on the 27th day of February. On the third day we tested the eggs, when, to our surprise, we saw a little form started. We could, by means of a glass, plainly see the pulsation; we tested out six eggs, and learned something each time. Our heat ran up on us once, and we thought we had ruined them. Then it ran down, which gave us another scare. But, notwithstanding all this, on the 19th day several eggs were pipped, and on the evening several little dears were out, just as pert as if a feathered hen had hatched them. Well, we got fifty chicks out of the ninety-eight eggs. We think it a splendid hatch for our first trial, don't you?

The chicks are over two weeks old at time of writing this, and are splendid. I lost some; there being five weak ones in the lot I lost them. Then I was so careful with them that I got them too hot, and several became prostrated, resulting in a loss of eight or nine. My husband built a house, and ran gas pipes through it, under the ground, and it heats it up nicely. We have a gravel floor, and a run outside, facing the south. I put air-slacked lime on the ground, and gravel on that. A pile of clover chaff is put down for them to scratch in, and they are never still.

We put 175 eggs in the trays again on the 21st of March. They are all yellow eggs, and I fear they will not hatch as well as the Leghorn eggs, their shell being thicker. Some of our friends saw our hatcher, and said we never would hatch a chicken in that thing—but we did.

WHAT HIS HENS HAVE DONE.

F. W. TEMPLE, WEST CHESTER, PA.

I have read in the POULTRY KEEPER different statements as to what small flocks have done in the way of producing eggs. I wish to state what my flock of fourteen hens have done for me the past five months. On the 15th of last November we got the first egg, and for two or three weeks did not average more than three eggs per day, as eight were pullets, and only six were two years old. On the 15th of April they ended the fifth month, during which time they laid seventy-four and one-half dozen, or an average of nearly fifteen dozen a month, besides raising two broods of chicks, and one hen setting. My house is 8x20, with glass front and cement floor; it faces the south, and is an extra warm place for them in winter. I keep sawdust and clover heads on the floor nearly all the time, which makes it much warmer and easier to clean. I sweep it out two or three times a week, and whitewash once a month. The house not being built close to us, the chickens are not confined in nice weather, as they have at least five acres where they can run at will, which they enjoy above all the fancy dishes you can prepare for them. My variety is Plymouth Rocks, with three or four mixed hens.

ECONOMICAL FEEDING.

Economical feeding does not mean to give the hens that which may be picked up on the farm, nor does it allude to food of inferior quality. It means that in order to procure eggs the hens must have food containing the materials that enter into the composition of the eggs. A plentiful supply of corn will certainly feed the hens well, and keep them in a fat condition, but there is a difference in feeding a hen for eggs and feeding her for market. A laying hen should not be very fat. She has no use for an excess of it. Her food must be rich in nitrogen and the phosphates, and consequently should consist of wheat, oats, meat and grass, with ground bone and shells, to say nothing of a liberal supply of water, which largely enters into the composition of an egg. She should also have dry quarters, with plenty of exercise and pure air. It will be found that by varying the food, and avoiding corn at this season, the cost of the food will be lessened while the number of eggs will be increased. The aim should be to derive the greatest amount of produce in the shortest time from the smallest proportion of food. Not that the hens should be deprived of food, but that it should be of the most appropriate kind.

CHANGING TO NEW FEED.

The hen that never saw sunflower seeds will probably take no notice of them when they are placed before her. She must, therefore, be educated to eat them by withholding all other food until hunger prompts her to give them a trial. If, after she has eaten a few, she turns away from them, the chances are that she will allow hunger to come upon her daily before she will eat them, which is not desirable. The best way is to begin when they are young, as it is not an easy matter to force something upon them that is not familiar to them, but where plenty of green food is allowed they will take more kindly to changes of grain or seeds.

INFERTILE EGGS.

Very often it is found that while eggs laid by the hens in the spring give strong, vigorous chicks, later on in the season the results are not so satisfactory. This is easily explained. Early in the season the cocks are more vigorous, and if mated with a few hens only, he will be nearly as serviceable at the end of the year as at the beginning, but if the flock of hens is large, he gradually becomes impaired, the number of eggs fertilized being less, until the time for moulting arrives, and then he is weakened by service and the renewal of the feathers. From July to October the eggs do not usually hatch as well, for the reasons given, as before or after that time.

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Preventing Gapes.—I see several parties in the POULTRY KEEPER give remedies for the gapes. I think prevention better than cure, and will give what I used several years, and am not troubled with them now. Take about half teacup of lard, and thoroughly stir in about one quarter teaspoon of carbolic acid. When a brood of chicks are out, grease their bills and up to the top of their heads. If gapes are very bad on the place it might be better to repeat the greasing in a week or ten days.—*Mrs. J. A. Case, New Trenton, Ind.*

Bowel Trouble.—Please tell me in the next POULTRY KEEPER why I lose so many chickens from bowel troubles. Out of 121 hatched in the Prairie State Incubator, on March 6th, I have only seventy left. For the first three days I lost none, but they began to have yellow, thin discharges, and many died. I tried copperas water and tincture of iron, as I saw recommended in the POULTRY KEEPER. Their food for the first five days was rolled oats exclusively, then bread baked of wheat bran, corn meal and some vegetables. They also have had fresh meat and ground bone, with plenty of pure cistern water. I use Rudd's brooders (home made). I do not use a thermometer in them, but rely upon telling the temperature by using my hand, and endeavor to keep it warm, lessening the heat as the chicks grow older. Gapes, lice and roup are strangers to my flock.—*Mrs. L. E. Williams, Stanton, Va.* [The chicks have caught a cold, due, without doubt, to insufficient heat in the brooders. You should use thermometers.—ED.]

Full House.—I am running eleven Poultry Keeper Incubators, 2,000 egg capacity. My house contains twenty-seven pens, and they are all full of chicks. I must stop hatching as I have no more room.—*A. P. Arnold, Vineland, N. J.*

Complete and Reliable.—As a constant reader of the POULTRY KEEPER, permit me to express my appreciation of the "Contents" feature, recently added to your publication, and to express the hope that it will be continued. When I first became interested in poultry, as a matter of informing myself, I became, at one time and another, a subscriber to nearly all the poultry publications. As a result, I now take only the POULTRY KEEPER, and find it furnishes complete and reliable information upon all subjects pertaining to poultry.—*J. W. Clise, Seattle, Wash.*

Rupture of the Reproductive Organ.—I am a greenhorn in the poultry business, but I find lots of pointers in the POULTRY KEEPER. I had a curious thing happen today to one of my hens. I saw blood in the coop, and on looking around saw a hen looking as if she did not have a friend in the world. I also found a very funny looking thing in one of the nests; it looked like a new potato in size and color. It was soft, and I took it out and laid it on a shelf. Taking my pen knife I cut it open, when a large quantity of thick fluid came away, and on the inside was the yolk and shell of an egg. This brown covering was a quarter of an inch thick, and the yolk was as hard as if it had been cooked, while the shell was soft. Now what on earth was it? Will it kill the hen?—*Fred S. Oakes, Huron, Ohio.*

Fed to Keep Warm.— I have been keeping poultry for a number of years, but I found after reading the POULTRY KEEPER that it was very little I did know about chickens. I had been feeding grain to keep them warm, as I thought, with the result of no eggs. I was beginning to get discouraged, but will go ahead with better prospects now.—*Geo. Pate, Youngstown, Ohio.*

Hooper's Condition Powders.—I am now feeding Mr. Hooper's condition powders, given in the January number, but his prices knocked me silly. There is not an article mentioned in his formula that I could touch at his figures. I left out Horsford's Acid Phosphate, as I did not think I could afford to feed it at sixty cents per pound. He quotes linseed meal at two cents per pound. I have to pay three cents in 100 pound lots, and so on all the way through. His seventeen and one-half pounds cost him $1.49. My three pounds cost me fifty cents. I cannot understand how he can feed meal at two cents per pound, or anything else at a like price, and get a profit from it, feeding it as a regular ration, as he claims he does.—*R. H. Martin, Delphos, Ohio.*

Color of Young Chicks.—In December, 1891, a friend loaned me a number of the POULTRY KEEPER, and in it was the description of the chicks of different breeds the first day or two out of the shell. I showed how differently they looked, in color especially, when they are feathered. My White Plymouth Rocks often hatch out as dark as the barred variety, but when feathered are pure white. Some of the people who see the dark chicks think they are not pure. I never had a chick yet but has feathered pure white in every feather.—*H. J. Bryan, Mohawk, Canada.*

Seventy per Cent. Hatches.—I raised 200 chicks, hatched by an incubator I made myself. I had about seventy per cent. hatches. A lot of the chicks died as they were ready to come out of the shell. My incubator is run by a lamp.—*Hugh Spittal, Black Heath, Canada.*

Poultry in California.—I saw in the POULTRY KEEPER for March that G. W. Duncan, Sedalia, Mo., would like to hear from poultry raisers in California. We came here two years ago from Allen county, Kan., and have better success in raising poultry here than we did in Kansas. Last year we bought a Santa Ana Incubator and Brooder, and, in four hatches with the incubator, averaged ninety per cent. of the fertile eggs. We had fairly good success in raising the chicks. Our worst enemy is the roup. We feed oats, Egyptian corn, wheat, etc. Our neighbor, Mr. F. Hardesty, of Orange, Cal., in March POULTRY KEEPER, has a sad story to tell and hope he may have better success this year. We think the POULTRY KEEPER is the best poultry paper published. I endorse what S. L. Skivers says about it becoming a weekly.—*Mrs. F. L. Smith, McPherson, Cal.*

The Moisture Question.—I am in the poultry business on a small scale, and like to get all the good information I can in regard to the business. I see some very interesting articles in the POULTRY KEEPER. In your December number, Fanny Field says "don't use any moisture for seven days." I don't understand this theory. I want to know if there is not as much moisture in a hen the first seven days as in the next fourteen? I am running an incubator, and put the moisture pan in when I start the machine, and I have very good success. I have run my machine three years, and hatched ninety per cent. of the eggs.—*J. M. Tu'l, Council Grove, Kan.*

Poultry on Town Lots.—I have four town lots, and have just started in the poultry business for pleasure and profit. My wife and I are quite interested in the raising of fancy poultry. We shall try to keep about four distinct breeds, and the best that money will buy. Our favorites are White Leghorns, for layers; Plymouth Rocks, for market; Indian Games, for table, and Pit Games, for style and sport. I have a yard 80x295 feet, divided into four yards of equal size; think I have room for twenty-five hens and two cocks in each yard. I have one house 10x66 feet, with the different compartments built after my own design—warm, plenty of light, etc. I have wintered about seventy chickens, and not one of them had a frosted comb. Of course, you know this is not the warmest climate in the United States, getting twenty-six degrees below zero some of the time. I shall build another house the same size as the above, this summer, and another year I will be in shape to put some good stock on the market.

All Men Equal.—I consider the POULTRY KEEPER the best paper of the kind published, and find it a great aid. Of course, there are some articles in it I do not agree with, but then "all men were created equal, but not alike." I would like to send you a small article on an amateur's idea of the score card if you consider it advisable.—*Frank Breed, Minneapolis, Minn.* [We would be pleased to have your article on the score card matter.—ED.]

Likes it Best of All.—Your paper was recommended to us by our son, Dr. Ganoung, of Lincoln, he having seen it there and thought it the best of all poultry papers he ever saw. I sent for all the numbers for 1892, and subscribed for this year. We like it very much, and find a great deal of valuable information in all the numbers. We have only forty hens, mostly Plymouth Rocks, but want to keep a larger number as soon as we can build a poultry house.—*W. J. Ganoung, Cortland, Neb.*

Corn Feeding. I see in the April POULTRY KEEPER that the corn question is creating some interest. We would like to give you our experience. In the spring of 1892 we had about forty hens and received only two or three eggs a day. But we can account for that now, for we did not feed much else but corn. The hens were very fat. Now we have fourteen hens, and in February received twelve and three quarter dozen eggs. In March, nineteen and three-quarter dozen, or an average in March of over seventeen eggs each. We feed a little corn meal, boiled blood and bone for the morning feed, and cooked oats at night. We would not feed much of the cornmeal if we had wheat bran or some substitute. Our hens are only in good active condition, and not fat. We know from experience that corn alone is not the proper food for laying hens. However, we feed a little whole corn at night in very cold weather.—*E. E. Edwards, Redding, Iowa.*

Granulated Oatmeal.—In the March POULTRY KEEPER I noticed a short article from J. H. Hughes, Kautz, Pa., giving his manner of feeding young chicks, and speaking a good word for granulated oatmeal. I can heartily endorse what he says regarding it, having used it the last two seasons, and never found anything in the feed line that answered the purpose or suited me better, Mortimer's Prepared Feed excepted. These two articles, with a few stale bread crumbs occasionally for a change, constitute my entire feed. All are fed in a dry state. I would say to the readers of the POULTRY KEEPER, try it this season and then send in your verdict.—*R. H. Martin, Delphos, Ohio.*

Equalized the Heat.—When I ran the Poultry Keeper Incubator I found that there was from two to three degrees difference in the heat in back and front, the back being the highest; and that when it came to hatch, the back eggs would hatch first and best. To remedy this, so that all parts would hatch alike, I cut off the egg drawer so that the part which holds the eggs would be separate from the part which holds the sawdust. The drawer was in two parts—one held the eggs and one the sawdust; then I could take out the egg drawer, turn the eggs, etc. The part that had been front I put back, like a plug, thus all the eggs got the same amount of heat, and the hatching was a great deal better. If any one of your readers do not understand this way of fixing the egg drawer, I will send the drawings of it.—*H. D. Ives, Cheshire, Conn.*

Big Laying.—My White Wyandottes, five hens and a cock, are fine birds. They gave me, in January, twenty-four eggs each, and twenty-two eggs each in February. They began laying last November.—*J. A. Boyce, Allegan, Mich.*

Sandy Soil.—I have twenty acres of black soil, but mean to trade it for sandy soil, and make a business of poultry raising. I am doing well with my Light Brahmas, but I am afraid of the continued dampness. I do not know of a poultry farm near here, but the majority of farmers keep from twenty-five to two hundred fowls.—*C. H. King, Grand Park, No State*

Left the Eggs Alone.—I had a hatch last week, and the chicks are doing fine so far. I did not turn the eggs during the entire hatch. After the eggs were in the incubator five days, I tested them, put the egg tray back and then did not touch them again until I took out the chickens. I had a fairly good hatch. I did not use any moisture of any kind, and kept the air tubes all closed. There is not much trouble in hatching this way. I was experimenting a little, and am satisfied that a good hatch can be obtained by not touching the eggs, only to test them.—*F. O. Burrows, Cortland, Ohio.*

Hen Was Too Fat.—I keep about twenty-eight hens, a cross between White Leghorns and Brahmas, which my wife assists in caring for. She feeds them every night, and brings in the eggs. A few nights ago she brought in a very large egg, but perfect in shape. It weighed five ounces. When she broke it, about four tablespoonfuls of white came from it, inside of which was an ordinary sized hard-shelled egg. The other egg when broken was found to be perfect.—*James B. Berry, Pawtucket, R. I.* [The cause of the abnomal egg was that the hen was too fat and overfed.—ED.]

Cured Crop Bound.—About four weeks ago I noticed that one of my hens had an abnormally large crop, and appeared unwell. Upon examination I found her crop was hard and unyielding, a pretty good sign that she was crop bound. I immediately made a small incision in her crop, and carefully removed the contents, which consisted of a sample of everything around the place, except the house and barn. I then sewed both the crop and outer skin with white silk, and kept the hen shut up for two weeks, feeding a very little soft food. The obstruction was a piece of gristly bone, four inches long. The hen is well and laying nice. I think your paper is the "*ne plus ultra*" of poultry papers.—*Horace Sessions, Sammons' Landing, Mich.*

Worth a "V."—I received a few samples of the POULTRY KEEPER, and was so well pleased with it that I subscribed, and would not do without it for a "V." Some poultry journals send no samples unless paid for. Whether or not they are worth having, I do not know.—*W. S. H. Hinkle, Russell, Kan.*

It Must Be Studied.—The sample copy of the POULTRY KEEPER came just when I was trying to decide what journal to take this year. After reading it I was not long deciding. One feature of the paper, which I think is very instructive, is the individual experience given. I have long since found poultry keeping a money-making business; but it cannot be picked up at any time, just when we want to work at it, or when prices advance. It is a business that takes time and daily attention to learn. To manage poultry profitably when there is nothing wrong is quite a different thing from what it is when everything seems to be going wrong. It is, indeed, a business that must be studied, and the POULTRY KEEPER no doubt helps many. My experience is in keeping farm poultry, and we would hardly know how to made a living on the farm without eggs for market, which I have made a specialty.—*Hattie Magee, Grant City, Mo.*

A Good Beginning.—I made one of the Poultry Keeper Incubators and had very good luck with it. Out of twenty-six eggs I got twelve nice chicks, all the other eggs being infertile. I am in the fancy poultry business and think I can get good information from the POULTRY KEEPER.—*Irving D. Rivenburg, Talcottville, Conn.*

Butter and Eggs.—Under the above heading an article appeared in the April number of the POULTRY KEEPER. I think the writer favors the hens. The cows get two pails of corn and barley ground, for which he charges seventy-five cents, and the hens get one bushel of corn and oats for which he only charges thirty cents. I would like to ask him why the latter are so much cheaper than the former. Although I keep hens myself, I like to see fair play. I think he also charges too much for the hay, and not enough for the mash, etc. Long live the POULTRY KEEPER and its present editor.—*H. S. Cheeseman, Sardinia, N. Y.*

Poultry in Canada.—We had it about as cold out here this winter as we want it, but I succeeded in getting eight eggs a day from a flock of thirty hens. We are equal to the occasion in this country, and find nothing can beat a good sod hen house. I look for the POULTRY KEEPER anxiously every month.—*Harry M. Niece, Alexander, Canada.*

Cuts Jack Rabbits.—I have a Mann bone cutter. It works nice and cuts jack rabbits up to perfection, as well as bones. The famous whitewasher solves the lice and jigger question in a hurry. I believe in whitewashing once in a while, even if there are no lice, for cleanliness goes a long way toward filling the egg basket, as well as being a comfort to the chickens.—*Henry Fuller, Liberal, Kan.*

THE COST OF DRESSING FOWLS.

As the birds sent to market must be dry picked, if killed, and not scalded, it entails quite an item of labor and expense to prepare the carcasses so as to have them free of pin-feathers and make an attractive display. Until practice enables the operator to perform the work quickly, the disgust of such jobs will remain. But it pays to dress the fowls, as can be shown. When the prices of live fowls are twenty cents per pound, the dressed fowls usually bring twenty-five cents, or five cents per pound more. This is a small difference, but when a fowl weighs three or four pounds, it adds fifteen or twenty cents to the price. Expert pickers will dress a fowl for five cents, but, admitting that it may cost ten cents per fowl, it leaves a profit. Looking at it in another light, we may add that if a person can only dress one bird in half an hour, or twenty per day, at five cents per pound difference in price, it allows from two to three dollars per day as wages, and where there are a number of persons in the family the item becomes a large one, if there are a great many fowls.

ARE HEAVY WEIGHTS DESIRABLE?

Something depends on what the objects are. There is as much difference in the keeping of the several breeds of fowls as in keeping stock. If one makes a specialty of raising poultry for market, the weights should be medium, as the sales are made by the pound; but if eggs are to be depended on as contributing a portion of the profits, then weight must not be considered. It is no disadvantage to have a large, heavy laying hen, if weight and egg production can be combined, but as a rule the very heavy hens are not good layers. With stock, there are special beef breeds, as the Herefords, Short-horns and Scotch polled cattle, while the Ayrshires and Holsteins are intended for milk. These characteristics are of course impossible with birds, but, nevertheless, there are breeds that excel in egg production, while others readily convert food into flesh; and the poultryman who contemplates the management of a poultry establishment should have a definite purpose in view, and select those breeds which best conform to the requirements of the poultryman in the beginning, as any mistake occasions the loss of at least one year's time. Hence, do not aim for heavy fowls unless you intend to make a specialty of weight. The different breeds all have their peculiar characteristics.

A FOOLISH PREJUDICE.

It has been claimed that incubator-hatched chicks are inferior to those hatched and raised in the natural manner, and that they are not suitable for breeding purposes. Such supposition arises from ignorance. There cannot possibly be any difference. If a chick is hatched, it comes into the world fully endowed by nature to maintain its existence, no matter what the method of hatching may be. But after it is hatched, everything depends upon the care. We have seen incubator chicks superior to those hatched under hens, as also the reverse. They are, when matured, equal as breeders in every respect.

MANAGING FOR EGGS.

When the poultryman has made his preparations and begun his operations, he is often disappointed at not receiving a fair return in eggs for the attention and care bestowed. The majority of failures arise with those who have given the fowls all they can eat, and with a liberal supply of ground oyster shells, ground bone, gravel, fresh water and green food, no eggs reward the persevering poultryman. The cause of failure is, that the hens are over-fed. It is always a mistake to keep food before them, and though a variety should be given, care must be exercised not to feed a full meal except at night. If the food is so given that the hens will not be satisfied with the quantity they have received, they will hunt for more and keep busily at work. This avoids idleness and prevents them from pulling feathers, or becoming too fat. In the morning the soft food may be given, but it is best to give not quite enough rather than a full allowance. Then scatter but a few grains in straw, dirt or litter, and let them get to work scratching. At night give a full meal. By keeping the hens warm, busy and in moderate condition, they will lay well.

SWELLED HEADS AND SORE EYES.

This season there have been more complaints of these difficulties than is usual for warm weather, but the cause may be traced to unusually damp weather and cracks in the poultry house with draughts of air from the ventilators at the top. A little crack in the poultry house, if near where the fowl roosts, will cause inflammation sooner than if the bird is outside. A bird can endure one side of the poultry house open, but there must be no draughts. When hens are thus affected they sometimes become entirely blind, and soon are too weak and debilitated to stand up. The best remedy is to add ten drops of carbolic acid to a gill of water, and bathe the head with a soft sponge. Feed the bird on nourishing food, giving an allowance of meat, and if the bird is unable to eat, force the food down the throat. When the hens show signs of this trouble, the first thing to do is to examine the poultry house for cracks. They may be so small and insignificant as to escape observation, but they will surely be found upon careful search, and no time should be lost in closing them. The roof also should not be overlooked, as dryness is very important.

THIEVES IN THE YARDS.

What the dog is to the sheep industry, the thief is to the poultrymen. Hawks, owls, minks, rats and cats sink into insignificance compared with the midnight marauders who go forth, bag in hand, to help themselves to the fattest and best of the flocks. Watchdogs, burglar alarms and shotguns do not avail, for, strange to say, but few thieves are ever caught. There is one safeguard, however, which is the watchman. When the poultry business is a large one, and quite an amount of capital is invested, there is work that can be done at night, such as spading the yards, cleaning up and, if brooders are used, attending to the keeping of a uniform temperature. Where small flocks only are kept, the whole neighborhood should combine to hunt down a thief, even if a detective must be employed, the expense to be borne by all, and not to leave the matter to the wronged individual, who usually allows the affair to drop. When a theft occurs it is to the interest of all that the thief be caught, for there is no knowing, in such a neighborhood, "whose turn will come next."

SANDY SOIL THE BEST.

The poorest and most unproductive of sandy soils are best for poultry, as the rains carry down the filth, and, the soil being light, can be easily spaded or turned over. The sandy soils are also dry, and therefore such diseases as cholera in fowls or gapes in chickens are rather unusual, compared with the damage from such diseases on heavy, stiff land. Cheap sandy lands can be put to excellent use in raising broilers, and if it is desired to grow crops on the land, the droppings will gradually bring it to a certain degree of fertility.

THE POULTRY KEEPER.

Subscription Price, 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates, 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

To THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

THE index on first page is a valuable aid to readers.

YOU can get this paper six months, on trial, for twenty-five cents.

WE have a binder—just the thing for the POULTRY KEEPER—at sixty cents.

ON our first page is a report of the Washington State Poultry Association.

BROILERS were fifty cents a pound on May 1st in the New York market.

THE best poultry house depends upon the size of your pocket book.

CHICAGO is ready, looking over the field, seeking whom she may devour.

LOOK out for lice—and look very closely—or the lice will break your business.

DON'T send money or subscription to the editor. He can only mail it again to this office.

MR. E. E. QUICK edits a monthly called *Poultry and Pigeons*, at 92 Himrod street, Brooklyn, N. Y.

THE *Poultry Monthly* has removed its office from 481 to 467 Broadway (Rooms 27 and 28), Albany, N.Y.

WE do not sell incubators, birds, eggs, thermometers, or supplies, so do not send us money for such.

WE do not keep a list of commission merchants and know of no addresses other than are in our columns.

NO ONE can be successful with poultry who does not take a poultry paper. We can let you have *three* for one dollar.

ANYONE sending us one dollar will receive three copies of this paper, which may be sent to three different addresses.

THE Vermont man has sold out his Black Langshans, so he says, and we hope they have no red feathers on their plumage.

THE so-called recipe for preserving eggs, which came from Ohio, is another J. M. Bain trick. It is only a plan to get your money.

MR. D. F. BOMMERSCHEIM, Three Oaks, Mich., has a poultry house 104 feet long, and the garrett will be fixed for raising pigeons.

MR. AUG. D. ARNOLD, Dillsburg, Pa. has sold *Janitor*, the first prize Buff Leghorn at New York, to Dr. C. A. Wicent, Marion, Ohio.

WHY not give the Billy Goat a place in a *poultry* show. He is at least the peer of a Maltese cat, or a white rat, and has more dignity about him.

THE American Poultry Association will meet in Assembly Hall, upon the Exposition grounds, Chicago, on Wednesday, Oct. 18th, at 10:00 o'clock a. m.

THE Findlay Poultry and Pet Stock Association will hold its next show at Findlay, Ohio, December 26 to 30 inclusive. Mr. R. M. Wise, Findlay, Ohio, is Secretary.

IF you wish to get more than your money's worth, the POULTRY KEEPER, at fifty cents a year, will fill the bill, and each issue should be saved.

MR. F. W. MANN and Mr. F. P. Lee are now partners at Milford, Mass., under the firm name of F. W. Mann & Co., and they propose to make the bone cutter business boom.

MR. JOHN D. MERCER, Port Townsend, Wash., presented a silver cup to Mr. S. W. Lobb, Nanaimo, British Columbia, for the best collection of Indian Games at the Victoria show.

THE *Incubator and Brooder* is a newspaper published at Laurel, Del. It deserves success, but its field for work is no doubt restricted if it is devoted to artificial incubation only.

THE articles on "Bones as Food," and "Clover," have before appeared in the POULTRY KEEPER, having been taken from the circular of Webster & Hanuum, Cazenovia, N. Y.

MR. WM. P. WHEELER, of the New York Agricultural Experiment Station, says we did just what was right when we got "Uncle Mike" Boyer to take hold on the POULTRY KEEPER.

THE Swiss Mountain Kennels, Germantown, Pa., have just issued a beautiful catalogue of their St. Bernard dogs, illustrated with imported Leader, King Regent, and Eboracum at the head.

SUNFLOWER seeds contain, in one hundred pounds, twelve pounds of alluminoids, twenty pounds of carbo-hydrates (starch, etc.,) and twenty-nine pounds of fat. They should not be fed too lavishly.

WHEN the A. P. A. meets at Chicago, it will find important work to do in striking from the standard some of the breeds now described in it, but which really do not exist. New breeds should be put on five years probation.

The Fancier, published by John D. Abel & Co., 12 N. Holliday street, Baltimore, Md., is a weekly journal devoted to pigeons. It is full of beautiful illustrations, is an old publication and is just what a pigeon fancier needs.

CAPT. C. M. GRIFFING, Shelter Island, N. Y., now owns all of the Light Brahmas of George Perdue. This flock is remembered as having won prizes wherever shown, and Captain Griffing will not let them deteriorate in quality in his hands.

EGGS of Black Spanish always hatch well if the birds are on a range, and the hens lay very large eggs. Mr. John Bennett, Sunman, Indiana, sent us a few letters from parties who had tested the eggs of Black Spanish and the hatches were remarkable.

SO FAR, no one knows who will manage the Poultry Department at Chicago. There is a candidate for Superintendent from nearly every State, each supposing to have a "pull," while the candidates who are willing to judge are as thick as blackberries in July.

IT is not out of place to say that the "O. K. Feed," made by Mr. C. A. Bartlett, Worcester, Mass., consists of fresh meat and bone, ready cooked, dried and ground into meal. It is added to the other food, one pound being allowed to twenty hens. It keeps well.

THREE papers for one dollar: THE POULTRY KEEPER, *Farm Poultry* and *Fancier's Review*. Or you can select the *Southern Fancier*, *Practical Poultryman*, or *Practical Dairyman* in place of either one of the above except the POULTRY KEEPER.

MR. C. A. BARTLETT, Worcester, Mass., can supply ground bone, ground meat, pressed meat, green bones (ground), and such. His "O. K. Food" is an egg-producing article, and we use it extensively. We mention this in order to answer the inquiries of many who write us. He is a business man of the highest standing in Worcester, and makes a specialty of poultry foods.

THE Southern breeders claim that the South should have the next Secretary of the American Poultry Association, and they are advocating Mr. Geo. O. Brown, of Baltimore, for the position. This would be an admirable choice if Mr. Brown, who never desires an office, will accept.

THE market quotations on new poultry papers show, for the month ending May 31st, seven new ones, but sales of papers are slow. There is an upward tendency, with prospects of a decline, however. The market seems well supplied with poultry literature at last quotations.

SCORING a bird is easy. Just begin by supposing that the bird cannot score less than eighty points nor over 100, which leaves only twenty points to deal with. If you then hit the mark by being four or five points out, you will be about as close as the others get.

MISSOURI has determined to "boom" her poultry at Chicago. She has set apart $20,000 as premiums on live stock, of which first prize pairs of poultry receive $15, and second prize, $10. It is what other States should do also. Only birds entered from Missouri can compete for these special prizes.

WHAT a change has come over the *Southern Fancier* of late. It seems to have jumped up and flapped its wings for a loud crow. There is a great improvement, and it is a credit to the South. That reminds us that the *Fancier* and the POULTRY KEEPER can be had, together, for only seventy-five cents.

AND now somebody has invented Brahma Wyandottes. They have the plumage of the Light Brahma with the shape of the Wyandotte, the legs being clean. It is in order for the inventor to state that they are the best layers on earth; best for market, and best for everything, as that is the way the other fellows do.

WE are receiving a great many letters asking "why the chicks die in the shells,"—mostly from new readers. If they will send for the back issues, from January, which will cost but little, they will save time, expense and labor, as well as receive more information than we can give in a single issue. We are discussing the subject every month.

SOMEONE, every now and then, asks us where to get a regulator, or a rubber bar. No regulator can be made to *adjust* easily to any and all kinds of incubators, and we know of no one who makes them. The regulators on the incubators differ according to the makes. Rubber bars are sold at rubber stores. We know of no others who sell them.

"WHAT shall I do for a sick hen," says a reader who wrote us, giving no symptoms. We carried the letter to Uncle Mike Boyer, who wrote the following prescription: "Put a porous plaster on the back of her neck, and bathe her feet in tepid water three times a day. Allow ice on her tongue, and let her eat nothing but toast, but give a cup of catnip tea at night." He said that the prescription was on a par with the symptoms.

THE *Fancier's Journal*, Philadelphia, one of the brightest weekly papers of its kind, has had a change of management. It is now published by a stock company called the "Fancier's Publishing Company," with the following officers: President, J. Frank Perry; Directors, C. T. Thompson, Henry Jarrett and J. Frank Perry; treasurer, Henry Jarrett; Secretary and Business Manager, J. H. Drevenstedt. Mr. Charles H. Mason will have charge of the Kennel Department, while Mr. Drevenstedt will continue at the head of the Poultry Department.

WHAT makes eggs of pure breeds so high? Well, let us look over the field. First, if a breeder has a large flock, he must select only the best. He must go to the expense of keeping the breeds separated. He cannot turn them on the range, to mingle with other birds. He must feed cautiously and regularly. He must pack the eggs carefully, at an expense. He must take them to the express office. He must be ready to take any kind of abuse for the least fault or mistake. To us it is almost surprising that breeders can sell eggs at less than twice as much as they do.

MR. WILLIAM STAHL, of Quincy, Ill. the well-known manufacturer of spraying outfits, as advertised in these columns from time to time, has published a number of neat little phamphlets on subjects connected with spraying, among them being "Spraying Fruits; How, When, Where and Why to do it," "Spraying Apple Orchards," "How to Prevent and Destroy Diseases and Insects Affecting Grapes," "Insects and Fungus Diseases Affecting all Varieties of Small Fruit and Vegetable Crops," "Full Directions for Spraying Fruits, Vegetables and Flowers," etc. Any or all of these little books are sent, free of charge, to anyone who will ask for them, and each and every one of them contains much valuable information on the subject treated, and information, too, that should be in the hands of every farmer and fruit-grower in the land. Write for them to William Stahl, Quincy, Ill.

THE CANADIAN POULTRY REVIEW.

Every one of our Canadian readers should send for a sample copy of this excellent poultry journal, which is also on our club list. It is published by Mr. H. B. Donovan, 118 Victoria street, Toronto, Ontario, Canada, and the make-up and quality of the paper shows that he is the right man at the helm.

INCUBATORS AND BROODERS.

This book is No. 2, and is intended to give information in regard to incubators and brooders, and is by P. H Jacobs, who has given incubators his attention for many years. Its price is twenty-five cents, but to those who subscribe, or renew, we send the book, with the POULTRY KEEPER one year, for sixty cents. Printed in brevier type, and full of designs and illustrations.

THE SHOWS THIS YEAR.

Would it not be an excellent plan for the different Associations to combine and hold one large show at different points. For instance, New England, at Boston; the Middle States, at New York; the South, at Richmond and Atlanta; the lake region, at Detroit; the Mississippi valley, at St Louis, and the West, at Denver. It would save expense and time.

KENTUCKY GETTING READY.

The Kentucky Poultry Association held its annual meeting, at Lexington, in April, and elected the following officers for the ensuing year: President, J. F. Barbee, Millersburg; Vice President, Prof. A. Scoville, Lexington, Ky.; Secretary, Theo. Campbell, Lexington; Treasurer, J. R. Wallingford, Cynthiana; Executive Committee, Shelby Kincade, M. F. Norris, O. S Redd, Mrs. R. F. Neff, J. A. Thorne.

BOUND VOLUMES.

We have bound volumes of the POULTRY KEEPER from its start, April, 1884, which make a valuable library for poultrymen Price, $1.00, postpaid, for any one year 1885-86-87-88 are bound in one volume Price, $2.50, by express at buyer's expense, or $2.90 by mail, postpaid. They are all substantially bound in cloth with gilt stamp on front. Handsome and useful.

PROSPEROUS.

The year 1892-1893 was a very prosperous one for the POULTRY KEEPER. We have largely increased our circulation; do not owe one dollar; have one of the largest establishments of the kind; employ a large force, and we expect to increase. Electric lights, electrotyping, and all appliances are used in the building. And, what is more, we are not afraid to club with and boom other good papers.

NEBRASKA MAKES AN APPROPRIATION.

Nebraska has appropriated, through her Legislature, the sum of one thousand dollars to the Nebraska State Poultry Association, the object being to encourage the publishing of the reports of the proceedings of the Association for the benefit of the farmers of that State. If every other State would thus recognize the importance of its poultry industry, there would be a great addition to the wealth of the people who are interested.

POULTRY FOR PROFIT.

This book is No. 1, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the POULTRY KEEPER at sixty cents we will send the book and also the paper for one year.

THE POULTRY KEEPER SPECIALS.

This is book No.4—on Diseases. In order, however,to make it more valuable,we have included many other subjects. We will state that we have simply gone back to the old numbers of the POULTRY KEEPER and put "the best of them together," using the plates of special numbers of the POULTRY KEEPER, hence the name of "Poultry Keeper Special." It contains thirty-two pages the size of the POULTRY KEEPER. Price twenty-five cents, but for sixty cents we send it and also the POULTRY KEEPER one year. "Poultry Keeper Special," No. 2, is compiled also from former issues, but the contents differ from those of No. 1, and it is equally as valuable.

COOKING AN EGG.

Editor Harker in the *Fancier's Monthly*, San Jose, Cal., has the following point on cooking an egg. We knew the fact, however, but take occasion to present it as Mr. Harker gives it. He says:

"Cook an egg in hot water four minutes and it is good to eat; ten minutes, and it is tough and hard to digest; let it remain for half an hour, and it again becomes soft and digestible. Hot water hasn't had precisely that effect on Brother Jacobs, but it has by no means spoiled him, though he has been immersed in it for, lo, these many years."

It is true that the best way to have an egg in a soft condition when cooked, is to boil it as directed above. The egg is then more digestible, as the exposure to the heat for so long a time entirely changes its character. We give the above as an important point to those who cannot eat eggs cooked in the ordinary manner.

NITROGEN IN GRAINS.

One ton of the following grains and green food contains nitrogen as given below, the estimate being as to the proportionate amount of nitrogen in pounds, removed from the soil during growth:

Wheat,	41 lbs.
Barley,	32 "
Oats,	38 "
Corn,	32 "
Peas,	70 "
Beans,	81 "
Hay,	31 "
Clover,	39 "
Milk,	10 "
Potatoes,	6 "

Nitrogen is important, as it is the principal substance entering into the composition of the albumen of eggs. It will be seen that a ton of wheat contains more nitrogen than does corn, and that, pound for pound, clover contains more than corn also, while milk, though consisting largely of water, is also very valuable. The above should be retained for comparison in the future.

A FEW "FIVE CENT" BOOKS.

Here are a few back numbers that should be in the hands of readers, as they contain more on the subjects mentioned than any books published. Any one of them can be had for five cents in stamps:

Poultry Houses. April, 1887; October, 1888, and July, 1891. Fifty illustrations.

Brooders, Incubators, Appliances, Poultry Houses, etc. (many illustrations). August, 1889, and August, 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte Fertilization of Eggs. Scoring Games. October, 1889.

All about Lice (illustrated). October, 1887, and December, 1891. The latter shows the kinds of lice, magnified.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Houghton's (Cleveland) Poultry House. February, 1888. Also April, 1892.

A Whole Library of Points. A grand issue, August, 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. October, 1892.

How to Feed for Eggs. How Much to Feed. The Kinds of Food. Condition Powders. A Whole Book in a Small Compass. Nearly eight columns on Feeding, with tables and proportions. October, 1891.

The above books are almost invaluable to those who are interested in poultry, and you get more information on the subjects mentioned than can be had from high-priced books.

EXPERIMENTS IN KEEPING EGGS.

During an experiment at the New York Experim ent Station, the eggs were all wiped when fresh with a rag saturated with some antiseptic and packed tightly in salt, bran, etc. Eggs packed during April and May in salt, and which had been wiped with cotton-seed oil, to which had been added boracic acid, kept from four to five months with a loss of nearly one-third, the quality of those saved not being good. Eggs packed in bran, after the same preliminary handling, were all spoiled after four months. Eggs packed in salt during March and April, after wiping with vaseline, to which salicylic acid had been added, kept four and five months without loss; the quality after four months being much superior to ordinary limed eggs. These packed eggs were all kept in a barn cellar, the ordinary temperature of each box varying little from sixty-six degrees Fahrenheit, and each box was turned over once every two days. Little difference was observed in the keeping of the fertile or the infertile eggs, and no difference was noticeable in the keeping qualities of eggs from different fowls or from those on different rations.

SADLY OFF.

The editor of *Farm and Home* thus aims at the editors of poultry papers, and in so doing he gets himself in the mire. Here is what he says:

"Many editors of poultry papers laugh at the poultry department in general agricultural papers. For instance, the editor of *Farm Poultry* gravely informs his readers that 'corn meal is eighty-six per cent., almost nine-tenths, fat, hence is not suitable food for laying hens or growing stock.' The kind of corn that most of us feed contains only five to six per cent. of fat and ten to twelve per cent. of protein, making, when fed in moderate quantity, a cheap and useful article of poultry food."

We can inform our excellent friend that the editor of *Farm Poultry*, who "gravely informs" his readers as stated above, is also "gravely *correct*." Corn contains eighty-nine per cent. of dry matter, eleven per cent. being water. Of this only ten per cent. is flesh forming (protein), and seventy-two per cent. heat producing (starch, fat, etc.) If the editor has found a variety of corn which contains only five to six per cent. of fat, he must not forget the *starch* also, which is fattening. The editor of *Farm Poultry* had the starch in view when he made his claim, and he is correct.

THE NEW YORK STATE POULTRYMEN.

A special meeting of the New York State Poultry Society was held at the Madison Square Garden, the second day of the show, with a large attendance.

The society has been doing good work, not as a show society, but as a "helper" of the poultry industry of the State of New York, for which purpose it was organized. Every breeder who has the interest of the poultry industry at heart should send his "mite," $2.00 ($1.00 membership fee, $1.00 annual dues), with his application to F. E. Dawley, Secretary, Syracuse, N. Y. The society has already furnished numerous lecturers at the grangers' and farmers' meetings, who have tried to place poultry farming where it belongs to obtain best returns "to the acre" for the money invested. A committee of three, Messrs. Geo. Peer, Jas. Forsyth and F. A. Fullerton, was appointed to interview Hon. Donald McNaughton regarding the free transfer of all poultry designed to be exhibited at Chicago. Should this concession be granted (as is probable), the Empire State breeders can thank the N. Y. S. P. S. for favors denied the majority of exhibitors.

The fifth annual meeting of the State Poultry Association was held recently in Agricultural Hall, Albany. W. H. Gilbert was elected chairman. The World's Fair Committee asked that their report might be laid over until a later meeting to be held in Chicago. Granted. A resolution was adopted to fix the date of the annual meeting the same as that of the Agricultural Society. The Board of Directors was increased from six to eight members. Officers were then elected as follows: President, George E. Peer; First Vice President, James Forsyth; Second Vice President, F. W. Fullerton; secretary, F. E. Dawley; Treasurer, W. R. Wheeler; Board of Directors, J. Y. Bicknell, Erie county; H. A. Davis, Canastota; W. P. Brace, Victor, Ontario county; S. T. Carpenter, Milton, Ulster county; S. D. Ely, Rochester; A. H. Ellis, Willsboro Point; O. T. Lewis, Schodack; W. H. Gilbert, Richland, Oswego county.

The membership of the Association has increased very much and efforts will be made to add to it. Nothing can be done about a World's Fair exhibit until the heads of the department at Chicago settle about the entries, how awards shall be made, etc. The association expects to send an exhibit, however.

WHITE SPORTS.

Mr. F. M. Clemens, in the *American Poultry Journal*, gives an excellent article on white sports, which we reproduce below, in order to comment on the subject. Mr. Clemens says:

"Mr. Jacobs pronounces the White Langshan a fraud. It may be so but good proof should be required. The albino or white sport from black breeds is by no means so uncommon as Mr. Jacobs would have us believe. In my own experience I have seen white sports from Laced Wyandottes, Barred Plymouth Rocks and Black Spanish, all of which I positively knew to be genuine sports.

"Why Mr. Jacobs should think a White Langshan sport an improbability I am at a loss to know, although I fully coincide with him in his opinion of so-called buff sports. An albino is quite a different thing from a "buff sport," which latter is not a probability. As a breeder of Buff Wyandottes, I would be doing my customers an injustice by claiming them to be a buff sport. The fact is that the best Buff-Colored Wyandottes are bred from specimens of Golden Wyandottes which were so defective in color as to come very near a buff color. Buff Cochin blood has been used to advantage in the make-up of the breed by some breeders. The final outcome will certainly be a pure buff breed of Wyandottes and toward that end the breed is now rapidly progressing. They are not superior (practically) to other Wyandottes but give a wider scope for the satisfaction of taste in the matter of color.

"Speaking of White Langshans, I was much surprised while attending a poultry show at Columbus several years ago, at being shown a pair of pure White Langshans, with the dark legs and unmistakable Langshan form, carriage and other outward seeming. The breeder who showed me the birds said they were bred in his flock of Black Langshans and were quite as much a surprise to himself as to others. This was before White Langshans were advertised. I have now forgotten the breeder's name, but I do not think he ever tried to profit by his 'discovery' of a new breed."

In reply to Mr. Clemens, we will state that it is a very singular thing that while the Standard for years compelled breeders to discard every bird that even had a white speck of feather on the toe (not even a dot of white allowed on the plumage), they *suddenly* began to sport when the white plumage was wanted.

It is strange that persistent culling of the flocks, for fifteen years, in order to avoid even a speck of white, should not have *intensified* the black, and it is also strange that they did not sport sooner, years ago, before they were culled so closely.

Another strange thing is that as soon as one man found sports, and claimed White Langshans, the birds began to sport all over the country, after waiting fifteen years, and after being culled out for even having a speck of white on the toe.

Mr. Clemens is honest in his statement above, as he does not claim a buff sport from Wyandottes. We do not object to White Langshans, but we do object to the falsehoods that have been published, where parties "*made*" the breed and yet had the audacity to stand out as "importers," and who sought to injure every other man who was in the market against them. In *making* the Whites, of course, there will be a proportion of *mottles*, and these men were ready to claim that the mottles, too, were imported, using the cry of "stop thief," while trying to run off with the goods themselves, presuming to be extremely virtuous while aiming at the most villainous attacks upon others.

These men, however, go further. They claim to be *importers* from China, when, in fact, Miss Croad, who introduced Langshans into England, states that there are no White Langshans in China. If Mr. Clemens should claim that his Langshans sported white, these men, through jealousy, would try to injure his character and his birds.

SCENES FROM EVERY LAND.

This is a collection of over 500 fine photographic views, size 11½ by 14½ inches, designed to take the place of an extended tour of the globe, and embracing the most beautiful, interesting and striking scenes that divert the traveler abroad, the whole forming a photographic panorama of the world. With an introduction by Gen. Lew Wallace, and descriptions of the different scenes by Edward Everett Hale, D. D.; Washington Gladden, D. D.; Russell Conwell, D. D.; Hamilton W. Mabie, LL.B., Lit.D.; S. F. Scovel, D. D., LL.D.; C. H. Payne, D. D. LL.D.; Hon. Wm. C. P. Breckinridge; Hon. Henry Watterson, J. H. W. Stuckenburg, D. D., of Berlin, Germany, and other talented writers. Edited by Thomas Lowell Knox, and for sale by Mast, Crowell & Kirkpatrick, Springfield, Ohio.

A magnificent portfolio volume, printed on extra heavy enameled paper, handsomely bound, and containing a rare collection of large engravings, made from photographs, illustrating the most interesting and the most noted objects everywhere. This great work will probably take a foremost place among the publications of to-day. It deserves, and will doubtless receive a cordial reception at the hands of educated people everywhere. It is an educational work, occupies a field of its own, and in families where it finds a place, the children will, in a few months, acquire a more accurate knowledge of the world at large than their parents have gathered in a lifetime. It is one of those rare books that educate while they amuse, instruct and entertain. Giving as it does the most celebrated scenes in every country on the globe, it in a measure takes the place of an extended tour, which would consume years and cost thousands of dollars. At the same time it is of great value to those who have been abroad, because it recalls to mind the places they have seen and admired in the course of their travels; and it is of still more value to the stay-at-home, enabling him to become so familiar with the cities, buildings, scenery, and the manners and customs of the people of other lands, that he can pass in society as a finished traveler. It not only shows the choicest scenes from every country, but presents the impressions made by them on the minds of the most learned travelers and thinkers of the day. It is like having the whole world in your own home, with the greatest travelers and lecturers there to talk to you about it.

As all the illustrations are made from actual photographs, they possess the charm of accuracy; a photograph tells no lies. The descriptions are charmingly written and contain a surprising amount of information. The system of indexing used renders the information relative to any city, country, building or scene readily accessible, thus making it a valuable work of reference. It contains many fine photographs of famous paintings and statuary in the art galleries of London, Paris, Florence, Rome, Dresden, and other great cities. The publishers have cause for congratulation in the fact that considerable space is devoted to American scenery, there being too much of a tendency on the part of publishers generally to illustrate other lands to the neglect of our own.

Gen. Wallace's introduction gives a foretaste of the good things that follow, and Hon. Henry Watterson's article on "London and Paris" is written in his most vigorous style, and deals with matters that render it exceedingly interesting. Hon. Wm. C. P. Breckinridge has an article on "American Progress" that is also well worth reading. The typography and press-work are excellent, and the character of the views selected shows careful, painstaking work and nice discrimination. Evidently the world has been ransacked for the beautiful in nature and art, and as one turns the pages of this book, he becomes lost in the contemplation of famous castles, hoary cathedrals, historic ruins, charming mountain, lake and river views, and a thousand and one other strange, fascinating and instructive objects that give variety to terrestrial scenery.

THE BROODING QUESTION.

A subscriber living in Willimantie, Conn., asks a number of questions about brooding which might be of general interest. Following is a synopsis of his letter:

"In the November number of the POULTRY KEEPER there is a notice of Mr. Stapp's method of brooding chicks. If I understand rightly, six feet from the pipes the temperatvre is 65 to 70 degrees, and the chicks will stay where it is just right. I would like to have your views in the matter. I see in the May, 1892, issue, that some one raising 400 in a room 20x20. That would settle the fresh air question. Do you think it would take more fuel than hot water pipes? Now, it is claimed that bottom heat causes leg weakness. Perhaps if the chicks could spread out on a good soft bed of chaff, and not crowd, it would be better than a hard board with a little sand. Mr. Stapp's pens are nine feet long; would it not be better to make them five feet? If he puts 150 or 200 chicks in a pen, and the heat be right, I do not think they would huddle unless they were frightened. Just see a lot of chicks in the sun, when the heat is right—there is no crowding. Have you ever used a brooder without a hover for the chicks to get under? The Harper's is that way, and so is the Excelsior. What is the object of having the heat come up in the centre of the hover? Would it not be better to have four places (like the Harpers)? Take the common lamp brooder, sheet iron above the lamp, and air space between the iron and the floor. Of course, the floor must be warmer in the centre than at the borders, and in extreme weather the flame must be increased. The outside chicks must be cold, while those in the centre very warm. Those in the centre will strive to get out, while those on the outside will crowd. I think that is the cause of leg weakness, in part. Some claim that chicks must have pure air, and that a shed is the best place for a brooder, and at the same time they keep 100 under a board three feet square until they are five weeks old. This gives each chick a space of about 3x4 inches. If they cannot live in a common brooder house ten hours in the daytime, how can they live under the hover for fourteen hours? Some will say that chicks that are three weeks old can be taken out of the brooder and put into a coop after the third week in April. Would you advise it? Someone said that a brooder can be run for ten cents per week with oil; with hot water pipes thirty cents; others will reverse the figures—who is right? What gain is there in putting a brooder outside? In January, February, March and April it must take more oil, and the brooder will have to be opened three times per day at least to feed, and it ought to be cleaned out every day. Where will you put the 100 chicks, even at four weeks old, when you clean the brooder in fair weather? How must it be in stormy weather?"

Our correspondent puts a great many questions in one letter, and at the same time he discusses the matter very intelligently. We will take up the subject, and endeavor to add something more to it.

In the first place, bear in mind that most of the early chicks are raised in *winter*. If one has the spring and summer advantages, then that puts another face on the matter, but we fail to see where any *fresh air* is needed in winter when the air is as cold as ice.

A young chick is always down on the floor, just where the *draughts* are. A chick is not three inches high, while the brooder house may be six feet high. This means that the roof is twenty-four times the height of the chick. A man in a house comparatively as high, if the man was six feet high, would be under a roof 144 feet high, and the little 6x6 inch egress holes, used by the chicks in going outside, would to a man be 12x12 feet square. We have no doubt that in such a building, and with such an opening right at his side, he would freeze. Yet nine-tenths of the readers seem to worry over *fresh air*.

Then, again, a young chick is really naked, like a baby. It comes from an egg heated to 103 degrees. No one would think of giving a naked baby draughts of fresh air in winter, but it is done for the chicks, followed by the inquiry—"What ails my chicks?"

Because air is warm does not imply that it is not *fresh*. It is not necessary to *give* fresh air in winter. The difficulty is how to *prevent* the cold from getting in.

We will also state that we once raised 400 chicks in a large room, right on the fourth floor of a building, on a main street in Chicago, but the chicks had *brooders* all the same.

The suggestion of chaff on the floor is a good one. Cut straw or hay is better. It makes a soft bed and prevents draughts along the floor.

We do not approve of putting more than fifty chicks in one brooder, though we admit that we have been tempted to keep a larger number together.

A brooder should be so constructed that the chicks can go *under* something at night, the same as with a hen.

The reason the heat comes from the centre is because it is *easier* to have it so, but it is not the best mode. Chicks will always crowd to the warmest place.

Chicks should be kept warm until they are well feathered. In winter they may have 95 degrees under the brooder. The heat will really be less, as the draughts along the floor will temper the air.

Hot water pipes are cheaper than lamps where large numbers of chicks are raised, but lamps are cheaper for a few.

There is nothing to gain by placing chicks outside. The brooder can be cleaned easily if it is in a house.

The hen seldom sits in winter, hence her period (spring and summer), makes it easier for her than during the cold winter season. She would lose every chick in winter if given no assistance.

We suggest that the issue of the POULTRY KEEPER containing "Points on Raising Broilers" be secured. It has forty rules that are very valuable to all who are interested in this matter.

COULD NOT MAKE THEM LAY.

A gentleman in Virginia has certainly fed his hens to make them lay but the hens did not respond to his kindness. Just why the hens did not lay we wish our readers to notice, as there is an important lesson in the letter. He says:

"In October I sent for two dollars worth of animal meal, and fed according to instructions, with ground corn, oats and barley, mixed, expecting such a rush of eggs as would enable me to start my incubator, running in November and kept running all the winter. At the time that I began feeding the animal meal there was one hen laying, but she soon ceased laying, and from all of my hens, about fifty in number, we never had an egg until about the first of April, and even now I am not getting more than three eggs per day out of the whole lot. I live on a 300-acre farm, and there are no limits to the range the chickens have. The chickens were not overfed during the winter, and for the past two months they have had to rely wholly on their own exertions for food.

I kept them in comfortable quarters during the winter. My stock consists of Buff Cochins, Langshans, Plymouth Rocks, Brahmas and common stock. We recently killed some of the last year's hatch of hens in order to discover, if possible, the cause of the trouble in not producing eggs. We found in them only the faintest embryo of eggs. My idea is, (it may be erroneous), that it has been for lack of corn. All of my neighbors had plenty of corn, fed it, receving eggs, I fed but little corn and received no eggs. A year ago I started out with a hatch of about 100 chicks, and began feeding chicken powders, according to instructions. I believe those powders killed those 100 chicks, as they all died. Afterwards I raised nearly all my chicks from other hatches to which I gave no condition powders. I shall be glad to have you give me the benefit of your opinion as to my experiences."

Now, the writer should have had plenty of eggs. His hens were not too fat, he had used animal meal and condition powders, made his hens scratch and work, and could find nothing omitted in the duties. While finishing the reading of his letter, however, we came to the word "over," and, turning to the other side of the sheet, here is what we read:

"I have been troubled with vermin, and have resorted to various methods, chiefly annointing chickens with mixtures of lard, kerosene, and carbolic acid. I have used sulphur, and have washed the roosts with tobacco juice. I have worked hard to free the chickens from this pest," etc.

It is plain that if the lice were so strongly entrenched as to baffle all remedies the hens must have been terribly afflicted also, and of course they were not fat, would not lay, and condition powders, animal meal, or other foods, could not prove beneficial.

We give the above to say that there are many others in the same predicament. Readers complain that their hens do not lay, and ask us the cause, when it is lice that is doing the mischief. Always look for lice when anything appears wrong with the hens.

DOUBLE-DECK HOUSES.

The desire to crowd the greatest number on the smallest space, and at the least cost, is of course very natural, but it may not always be the better plan, as conditions affect all propositions. In regard to a two-story poultry house a lady at Sheldon, Iowa, writes:

"Is there any objection to building a poultry house two stories high, for chickens in winter or summer, and build the yards double-deck outside? I have limited room, could put up another story, and secure double room. Of course the chickens would not have much light below, but I could light the building from the other side, and the chickens would not have so much sunshine. The upper story I could arrange with dirt, and the chickens could also scratch and sun themselves.

It would be well before attempting such a plan as the above, to pause and observe the departure from the natural method. Suppose a cow or two should be confined in the upper portion of a barn, with elevated yards adjoining. It would prove unprofitable to the owner, and unhealthy for the cow. Then, there is more labor required. We are inclined to believe that two-story houses are not equal to houses which give floors on the ground, and while we have seen many of such houses we have noticed that they were abandoned after one year's occupation.

EGGS WITH ROUGH SHELLS.

There is always some cause for large eggs, rough eggs, small eggs, etc., and we are reminded of this by the following letter from a reader at Grand Haven, Mich., who writes:

"Would you kindly inform us in regard to our hens laying eggs with rough shells. If one empties the contents, and holds the shell to some light, they look speckled, as though they were thinner in some places than in others. The eggs are fertilized, but the chicks die in all stages, we presume from the shells being too porous. Should the shells of hen eggs be as smooth as those of ducks?"

The difficulty is due to the hens being out of condition, probably somewhat fat and lacking exercise. The lack of vigor in the chicks is due to the same cause. An egg, to be perfect, should be of normal size, and *smooth*. The color is not indicative of the quality of the eggs, for it depends upon the pigment supplied. Supplying lime, shells, bone or other substances, will not remedy the difficulty as long as the hens are in an over-fat condition. The first thing to do is to reduce the hens in flesh, even if they must be starved to do so.

POULTRY YARDS.

It is difficult to advise in regard to poultry yards, as the "lay of the land," climate, kind of soil, and *cost* are matters to be considered. Mr. G. B. Shoemaker, Rome, Iowa, writes in regard to this subject as follows:

"I would like for you to give me some instruction on a poultry yard. I am a farmer and have eighty acres of bottom land. I have a sand ridge. Would that be a good place for poultry? How many chicks can I keep on one acre by fencing it into yards, and how large to have the yards."

The sand ridge is perhaps the best place to select. If there is plenty of land it will pay to allow an acre of ground to fifty hens, which should occupy half an acre while grass is growing on the other portion. Of course, this may appear expensive, but the hens will thrive better and give a greater profit.

The greatest difficulty to be met with is the cost of fences. This depends upon the kind of fence. It may be possible that if there is a space of an acre between the flocks they will remain separate, as stray members from one flock to another are always given a reception that is not very agreeable, but to have green food growing upon a portion of the ground will require fencing.

Everything depends on how much money one wishes to invest, and the governing influence in deciding such matters is the capacity of the pocket-book.

HUGE EGGS.

A reader at Westerville, Ohio, has a huge egg, and he calls our attention to it, as follows:

"In looking over the April POULTRY KEEPER I find a reader that has six eggs which weigh one pound. I have one egg, from a pullet, which weighs one-quarter of a pound, and one from a neighbor's flock which weighs only a quarter of an ounce."

Such eggs simply indicate that the pullet is *too fat*. Large eggs, of abnormal size, double-yolk eggs, and other egg monstrosities, mean that the hen or pullet is too fat. Very small eggs may be produced when a young pullet lays her first lot, but they also indicate too much fat.

A FLOCK OF CANNIBALS.

A reader at Reno, Ill., has a flock of poultry that differ in disposition from the majority of other flocks, inasmuch as both the males and the hens destroy the chicks. He says:

"Can you explain through the columns of your paper, why laying hens kill young chicks. I keep a flock of seventy-five Plymouth Rock hens. They have free range of four acres of pasture land. I have been feeding twice a day, but as so many of them were becoming broody, I concluded they were too fat, and cut down their rations to a light feed of grain at night. They have all the skimmed milk they will drink every morning. They have layed an average of thirty eggs per day since February 1st. I hatch chicks with hens and keep them in a pen separate from the old ones, and if one gets out and makes a noise they all pitch into it, (roosters and all), and eat, it up. I would like to turn the young ones on the range, but am afraid they would kill them. Please explain the cause and tell me what to do."

It is known that a hen will kill a chick not her own, should it stray to her coop but it is an uncommon occurrence for all of the members of the flock to kill chicks as described above. The only reason we can assign is that it is an acquired habit, resulting from a hen with a brood killing a chick in the presence of other fowls, and they at once followed her example. It may be, also, that the birds need more animal food. We request readers to give their views on the matter.

CAPONIZING AND NOTES THEREON.

Bulletin, No. 20, of the Rhode Island Agricultural Experiment Station is devoted to the production of capons. From the context we give some salient points. The summary of experiments states:

Caponizing was easily learned and successfully performed by following book directions, but more quickly and satisfactorily by witnessing the operation.

Birds apparently suffered but little pain from the operation and the per cent. of loss was small.

Birds thus changed grew larger in frame, matured better, became quiet and contented. did not crow or fight and their flesh remained soft and tender.

Those weighing two pounds or less were most easily and safely caponized, but the larger the birds, provided they had not commenced to crow and their combs had not developed, the more quickly they recovered.

The only birds that died under the operation were those that had developed combs.

The old Chinese tools, when their use was understood, were found most satisfactory of all.

Of the Brahma-Cochin cross, it was seven months before the capons equalled the uncastrated birds in weight, and they did not average one pound heavier in ten months.

The Langshan rooster although weighing but one-sixth of a pound more than the Langshan capon at the commencement of the experiment kept ahead in weight for seven months.

The Plymouth Rock capon equalled the roosters in weight in less than two months and gained on them the rest of the season, but did not average more than three-quarters of a pound heavier at any time.

The Indian Game capons were five months in catching up with the roosters, and were not a quarter of a pound heavier eight months after the operation.

The Brahma-Cochins gained the least during the first year, but made the largest and heaviest birds at eighteen months.

The Langshan was less affected by the operation, but was larger at the time it was performed.

The Plymouth Rocks recovered less readily, but they were operated upon when the weather was warmer, fifteen days later than the Langshan.

Indian Games and their crosses were harder to do and should be taken when younger.

These experiments show less gain in weight as the result of caponizing than we were led to expect by published accounts. The tender flesh and the ability to quickly take on fat seemed to be the only gain of importance.

During the exhibition of the R. I. Poultry Association, the ten Brahma-Cochin capons and the five Plymouth Rock capons gained, while the roosters of each lot lost in weight. The Plymouth Rock capons made the greater gain, while the Plymouth Rock roosters also showed the greater loss. The birds exhibited in pairs lost more than where there were five or more in the coop.

The plan of spraying the wound immediately after the operation with an antiseptic solution, requires further study to get definite results.

By the use of a physician's head mirror we are able to operate quite satisfactorily by lamp light.

THE ROUP—WHAT IS IT?

A lady reader at Mendon, Mich., brings the roup question right up to the mark. She shows that cats, dogs and chickens may all be affected with the disease, and she also states that fowls are daily sold in the markets that are unfit for food because of the ignorance of those who raise poultry in regard to diseases. We give her very interesting letter, as follows:

"I would like to ask the editor to state through the POULTRY KEEPER at what stage a cold is considered to be roup. A hen may have croup, rattling of the throat, etc., and not have roup. I would also like to know if eggs from roupy fowls are fit for consumption, and if fowls in the first stages of the disease, such as pipping, coughing, etc., are fit to eat? The roup is raging here, through the entire country, at a tremendious rate, and fowls are being shipped and sold in our own market that pip and cough, but because they do not droop or die they are considered good eating. Not one man in fifty knows what ails his fowls when they commence dying, which, in no case that I have heard, of is less than a year after the first symptoms of sneezing, etc. But as I am considered quite a chicken crank, I receive calls daily, from farmers, asking my advice. The kind of roup we have here is not the "Dutchman's hung-eye," but has no other symptoms but hard breathing, coughing and sneezing, until canker sets in, and then they die quite suddenly. There is no discharge from the nostrils. It is very contagious from the first, obstinate to cure and, in fact, cannot be cured. There is no disinfectant that will clear it out only by leaving the grounds and buildings unoccupied for several months. The cats and dogs also have it, and in no case when the cats get it are the fowls long exempt or when the fowls get it first are the cats long in taking it. I have seen so much of the disease that I cannot bear to eat an egg from the stores, much less a fowl from the market."

We may state that roup is a contagious disease, scrofulous in its nature, and which permits of several stages. If a fowl is cured of roup the result is that an abscess is formed, or, if not apparent outwardly, some of the internal organs are affected. Like consumption, it may attack the throat, the bones, the lungs, and even the bowels. It nearly always attacks the bowels of little chicks.

Canker is simply an evidence or indication of roup. It is really diptheria in one form, and human beings are liable to contract the disease, as well as cats or other animals. The first stages are *colds*, which may be cured, but unless this is done the disease attacks the weakest portions of the body.

The fact that the disease will not disappear until the yards are unoccupied for several seasons is evidence that the germs remain, and that the disease may occur at any future time.

Some *families* of fowls will be exempt from the disease, just as human beings will not be attacked with consumption while others who are subject to the same influences may sicken and die. We once saw a flock of Brown Leghorns and a flock of White Plymouth Rocks together, in the same yard, with the same kind of food, all drinking from the same vessel, and the conditions alike for all. Not a Brown Leghorn had the roup, yet every White Plymouth Rock died, lingering for weeks, and showing the effects of the disease by gradually wasting away. It was this family of Brown Leghorns that seemed exempt, and the liability to disease by this family of White Plymouth Rocks was in the blood, inherited as a susceptibility to disease from their parents.

Scrofulous consumption, or tubercular consumption, is the principal form of roup, and pulmonary consumption is another. The terrible odor is always proof of the contagious form. We use the term—scrofulous consumption—because it better applies as an explanation.

The hoarse breathing, or choking, occurs more with very fat fowls than with others, and it is somewhat like croup, though there is also a thickening of the larnyx (the upper part of the windpipe). Scrofula is really a disease of the lymphatic glands of the neck, but the term is now used to include those incurable diseases that attack the body as sores, etc. Canker is an attack by the disease of the membrane of the throat.

There are many forms of consumption, and roup is simply a name for the disease among fowls, though it may differ in many respects in comparison with humans. That it is hereditary (more susceptible), and that some fowls are more easily attacked than others, is known to be true.

Roupy fowls are unfit for food, and those who sell such birds may unknowingly take the life of some human being by inducing the consumption of carcasses that affect dogs and cats, and which, though apparently in the best condition as food, are receptacles of death-dealing poison to all who use them.

CONDITION POWDER TEST.

The Maine Experiment Station has recently made an examination of two brands of the various cattle foods or condition powders which are reputed to have such a wonderful effect on the appetite and condition of cattle and horses. Following is the station's analysis of linseed meal, new process, the average of fourteen analysis; and that of wheat bran, the average of eighty-eight analysis, added for comparison:

Marvin's food, 10.0 moisture, 5.5 ash, 35.5 protein, 9.3 fiber, 37.3 nitrogen-free extract, 2.4 fat.

Linseed meal, new process, 10.1 moisture, 5.8 ash, 33.2 protein, 9.5 fiber, 38.4 nitrogen-free extract, 3.0 fat.

Pratt's food, 12.4 moisture, 5.8 ash, 13.7 protein, 5.9 fiber, 56.8 nitrogen-free extract, 5.4 fat.

Wheat bran, 11.9 moisture, 5.8 ash, 15.4 protein, 9.0 fiber, 53.9 nitrogen-free extract, 4.0 fat.

The analysis of this food and its general appearance leave little room to doubt that it is made up of linseed meal, with the addition of small quantities of fenugreek, camphor and ginger. A careful examination of the ash shows that it contains no mineral salts in excess of the amounts usually found in linseed meal.

Marvin's food is put up in boxes containing about one pound each. For horses, cows and sheep the dose is two tablespoonfuls to each animal, to be mixed with the other food. For swine and calves, one tablespoonful is recommended. They claim as follows:

"This food fed to stock once or twice a week will keep them in excellent condition."

"For stock out of order, run down or in a worn-out condition, it has no equal."

"This food is prepared from the best known condiments of the vegetable kingdom."

If Marvin's food has any value above that possessed by linseed and cottonseed meal, it must be due to the presence of the condiments mentioned. While these materials have their place in the *materia medica* of the veterinarian, they should be used with judgement and with some reference to the wants of the animal. If fed in the quantities recommended it is difficult to see how any bad effects could be produced. On the other hand it is equally improbable that benefits would result from the application of such mild doses.

In this connection it may be well to consider the cost. Fifty cents a pound is at the rate of $1,000 per ton. In view of the probable cost to the manufacturers, this seems an exorbitant price.

LEG WEAKNESS IN HENS.

Leg weakness in hens may be due to high feeding, high roosts, or to being with the male. A reader at Hudson, N. Y., shows a case which should be explained here. He says:

"I have a Brown Leghorn pullet troubled with a weakness in her legs. I take her from the others for a day or two, and she gets much better, but when I put her back again she gets worse. I feed two parts bran and one part corn and oats in the morning, with boiled vegetables and Bowker's food, with occasionally chopped onions and pepper at noon, and at night, I feed wheat and buckwheat. Every other day I give a little corn. Plenty of shell and bone are always before them. Can you give me the cause and the remedy?"

The writer feeds *three times* a day, hence we know that his hens are too fat, and the male is fat and heavy. No one should feed three times a day, for if so the hens will not scratch and work. At this season of the year *once* a day is sufficient. When he removes the hen she gets better, and when he returns her to the flock she becomes worse. This indicates that the hen should be kept away from the male. The difficulty is with the spine, not the legs. Whenever a hen is weak in her legs, she should be at once removed from the male, especially if she is fat.

THE HOMŒOPATHIC REMEDIES FOR ROUP

Mr. A. A. Hamilton, Webster City, Mo., having read a discussion of the use of *Spongia*, etc., in our August, 1892, issue, sends us a letter in regard to which of the remedies should be appropriately used, which we give as follows:

"I have just found in your August issue, (page 78) that Mr. H. A. Pierce obtained no good result from the use of *Spongia*, but did get what may have been an aggravation. I have been much pleased to note the discussion on the use of *Spongia* for roup. Modesty, however, impelled me to silence, but I am anxious to see others benefitted by what little I do know. Long usage, study and acquaintance with the Homœopathic practive of medicine has taught me that more damage is done by misuse, through misapprehension, than one can imagine.

"Could I 'a tale unfold' it would interest all of your readers who are large brained enough to assimilate knowledge from even stories. Your comments on the above complaint of Mr. Pierce are most commendable, and I trust that you will permit me to give some hints which I would like to see tried by some of your readers.

"If the roup, in developing, appears first on the *right* side, give *Lachesis;* if on the *left* side give *Lycopodium*.

"As you say, not all cases are curable.. This is only partly true, because of the difficulty of getting that fine discernment of symptoms necessary to a close remedy. When this can be done, homœopathy will fail less than any treatment. The soft soap remedy is barbarous.

"*Spongia* will cure, and has cured, thousands of cases of infantile croup, but it is not an infallible specific for all cases of it. For the foul smelling roup I would like a description, or likeness, of the odor; the color of the discharge, if any; thirst, if any; time of day when worse; condition of the bowels; color of droppings, etc. *Arsenicum* will probably meet this if neither of the three before named do, or rather if *Lachesis* does not. The latter may be tried for these particular symptoms (odor) whether the disease appears on the right side or not.

"Use these remedies in the two hundredth potency, putting twenty pellets in half a glass of water, and dissolving thoroughly, which may be added to the water to be given to the whole flock. See that none of them drink more than once of the medicated water. Results may be apparent to a close observer in from four to six hours. I have seen them in fifteen minutes. If *none* appear in from twenty-four to fourty-eight hours, try another remedy.

"If any bright observers will give me close symptoms, sending self-addressed envelope, I will try and help them out as I can find time from my business."

The above is valuable. It shows that the two-hundredth potency (which is very attenuated) is better than stronger doses, for it is the minute quantity that is most effectual. We will be pleased if our readers will take advantage of the kind invitation of Mr. Hamilton, in the last paragraph above, and send us the results for publication. We are very desirous of giving more information on homœopathic remedies, but can only do so by the assistance of our readers and others. Mr. Hamilton proposes to assist any reader who will request him to do so, and such an excellent opportunity should not be overlooked. If he is crowded with too many letters, he has the use of these columns.

THE DUCKS HAD CRAMPS.

A writer who signs himself "E. C. C.," Cynthiana, Ky., (who should have given full name), makes an inquiry in regard to his Pekin ducks. He writes:

"I had a Pekin duck die. Its legs seemed to cramp, and stuck straight out, being useless. What is the cause of ducks not laying? I got five eggs one morning, and one egg a day for a week, from eight ducks. They are penned up until nine o'clock every morning."

The above gives no *details*. There is nothing about how the ducks are fed, how kept, or any information except that they do not lay. We must *guess* the cause. They are probably subject to damp quarters, which caused the leg difficulty, and they probably are overfed, being too fat, having too much grain and not enough animal food.

SUCCESS WITH CAPONS.

Mr. W. G. Oxley, Bakersville, N. J., knows how to make capons pay, and as to the prices, breed and instruments, which are very important, he says:

"I notice in my POULTRY KEEPER some items about capons. Now, I have caponized and raised capons for the past four years, and find quite a profit in them. This season I sold capons which pulled the scales at twenty-one pounds per pair, aged nine months. I use B. Plymouth Rock cocks on Light Brahma hens, and can recommend the cross to my fellow-poultrymen. The quality is good, and they make a fine size capon, as I can speak from experience, and when I can't make a dollar or more out of a capon, I will quit caponizing. I use W. H. Wigmore's caponizing set and find them the best I ever used. I have had capons to bring me $2.50 per bird. Now, my brother poultrymen, I say there is money in capons, and to know is to try."

In the above it will be noticed that he considers a cross of Plymouth Rock and Light Brahma as a good one, and that he regards $2.50 as within the prices obtained. The instruments of W. H. Wigmore are preferred, which we can also endorse from our own knowledge. The object should be to produce large capons only, as they bring the best prices, and are more profitable than those that are small or medium size.

THIS SHOWS FOR A LARGE FLOCK.

Mr. A. K. Clark, of Lakeside, Mich., in an article to a local journal, gives his record for three years, and with large flocks, (nearly three hundred hens), which will no doubt be very interesting. Mr. Clark says:

I have been very much interested in reading statements given by different ones on poultry and the cost per dozen to produce eggs The last statement that I saw was stated it cost eight cents per dozen. I would like to give my experience for the past three years. I will first say I live in Michigan, on the lake shore directly east from Chicago, and my market is Chicago.

I am keeping chickens for winter layers. I will give you the profits on wintering chickens. January 1st, 1890, I started with 180 chickens, worth twenty cents each. They laid in the first four months 776 dozen eggs; average price per dozen eleven cents, which brought $87.25; cost for keeping same, $39.69. Sold chickens in April, average price thirty-three cents per hen; cost of keeping, twenty-one cents; left net profit, thirty-six cents per hen.

January 1st, 1891, stock, 209 chickens, worth twenty-five cents each; eggs laid in four months, 778 dozen, sold for $116.31; average price, fourteen cents per dozen; cost of keeping, $57.33; cost of keeping per hen, twenty-seven cents; sold in April. average price, forty-one cents; net profit per hen, forty cents.

January 1st, 1892, stock on hand, 280 chickens, worth twenty-five cents each; laid in first four month, 874 dozen eggs; average price, twelve and one-half cents per dozen; sold for $117.36; cost of keeping for same time, $55; cost to produce eggs per dozen, 6-8-10 cents; sold in April, average price per hen, forty-four cents; cost of keeping per hen, twenty-four cents; net profit per hen, thirty-nine cents.

This is taken from book account as an estimate of keeping chickens in the winter. We keep a few hens through the summer to raise our chickens. We sell all the cockerels as soon as large enough for market, and winter the pullets. I will now give you the profits each year:

1890, chickens, 180; profits, $106.24
1891, chickens, 209; profits, $146.13
1892, chickens, 280; profits, $171.59

I have given you this statement for the benefit of your readers, who are interested in poultry.

The above is a showing for winter, but the profits for three years are also given. They are not large apparently but are really very large considering the capital invested for food, etc. The difficulty with most persons is that they expect to make large profits at but little outlay.

ROUND OR SQUARE ROOSTS.

"Isn't a small round roost, on which the chickens can cling tightly, the best?" asked Grandma Perkins. "That is the only kind we used when I was a girl, but my grandson, John, tells me they have a new-fangled idea now." "Small round roosts," replied the Judge, "have ruined many a fine chicken. In the majority of instances, as you all know, chicken coops are very cold, unless the owners are considerate in the matter of their fowls welfare. In clinging to these small roosts the fowls feet are cramped and benumbed, and it takes a very little nip from the frost to cause a bird to lose a couple of toes or even an entire foot, for a frost bite is seldom noticeable until sloughing or bleeding sets in. The best roost is a 2x4 scantling turned flat side up, with the corners smoothed off. On such a roost the chickens can squat down comfortably and cover their feet and shanks with the warm body and breast feathers." —*Farm, Stock and Home.*

THE HEN MUST.

Ida E. Tilson, of Wisconsin, has studied the matter out and finds that it is not optional with the hen to lay eggs any more than it is for the water to boil when the fire is hot enough. She says that little boy was wise who said to a cackling hen: "You needn't make such a fuss, biddy; God made that egg; you couldn't help but lay it." The poulterer's patience and intelligence, working according to the laws of Providence, produce the eggs, and whoever does not believe so, or gets easily discouraged, or was born tired, is not adapted to the egg department of poultry culture. He knows from experience.

LOOK OUT FOR HIM.

Some time ago, one A. W. Kinney, of Yarmouth, Nova Scotia, sent us a communication, in which he detailed how he made his hens lay. In fact, to read his letter, eggs on his place were as thick as blackberries, etc. He gave everything but the *kind of food.*

Before publishing the letter we sat down and wrote Mr. Kinney that we did not publish letters which served as an advertisement, and that we desired to know what the food was.

He replied that as he had expended much time and labor in his discovery, he thought it no more than fair that a very small sum (five cents) should be his reward. We thought so, too, and published the letter. We found that Mr. Kinney's great secret was only the same as we had published in the POULTRY KEEPER over and over again.

It is *meat.* Meat is the secret for which he now wants five dollars, as per the following letter from one of our readers, who writes us:

"A.W. Kinney, of Yarmouth, N. S., is getting a lot of free advertising out of you for all of those articles of his about his chicks' red combs, and dry cold-prepared feed business. He pretends to ask five dollars for the recipe for preparing it."

Mr. Kinney had nearly the same article in several papers, working his ad· trick. We would not give him ten cents for the whole of his knowledge. Meat has long been known as egg food, and we have stated it a hundred times. We were not aware that he would ask five dollars for such a thing, and he took advantage of our confidence, as we first wrote him for all the facts, and so we give the matter as it should be, to protect our readers. We do not state that he is a fraud, or wish to injure him. We simply say to other readers that their money is more serviceable in thei pockets. As Mr. Kinney may have something to say in his defence, our columns are open to him. When he stated that he only desired five cents, we allowed him the benefit of that sum. Even then we were wrong, for a small sum is an imposition also. No paper should publish anything that is not complete.

SULPHIDE OF CARBON FOR LICE.

We have received several letters in regard to sulphide of carbon (or rather, carbon disulphide) as a remedy for the prevention of lice, the following being one of the inquiries, which will serve to assist others:

"Is sulphide of carbon a successful remedy for lice in a poultry house? Will it injure the hens while the house is being treated with it? How often and how long each time should it be used."

The above is from Delphos, Ohio. Sulphide of carbon is a liquid, composed of sulphur and carbon, chemically united. It is very volatile, like gasoline, and has a disagreeable odor. It is claimed that if a wide-mouthed bottle is filled with it, and the bottle suspended in the poultry house by a string, the lice will leave. Being very volatile it is also highly inflammable, hence no flame of any kind should be brought near it. Poured into a rat-hole it instantly suffocates the animals, as it at once forms a gas.

It does not injure the hens if the carbon di-sulphide is given off in small quantities, though danger would result if the house was filled with it. Sprayed over the walls with a sprayer, and the house immediately closed (with the hens outside), the effect would be equal to the fumes of burning sulphur. The claim is that if only a small quantity continually escapes from a wide-mouthed bottle it is sufficient to drive lice away, though such a quantity would not destroy them.

Our caution is to beware of having fire near the building in which it is used, or an explosion would result. Otherwise there is no danger.

USING INSECTICIDES.

Paris green or other poisons cannot be used in the poultry houses or yards; but where it is desired to reach into the cracks and crevices, an excellent decoction may be made by pouring a gallon of boiling water over a pound of tobacco refuse and allowing it to steep over night. This may be sprinkled with a watering pot over the floors, in the nests, on the walls, or anywhere that it can be rendered serviceable.

CURE FOR CHICKEN CHOLERA.

We received the following letter from Nebraska, which is appended for the purpose of giving a little friendly advice. Here is the letter:

"I noticed in the April copy of the POULTRY KEEPER, in an article under the heading 'Chicken Cholera,' that the writer says there is no sure cure for chicken cholera.

"I would like to say, through the columns of the POULTRY KEEPER, for the benefit of all those interested in the poultry business, that we have a sure cure for chicken cholera. It will absolutely cure chicken cholera, and we will guarantee it to cure every chicken that is not too far gone to eat. We also will guarantee that everyone that feeds it as a preventative will never have cholera among their chickens. Anyone desiring to know more about this remedy, can, by writing to ———."

The writer wishes it published in the POULTRY KEEPER for "the benefit of those interested." Certainly—a very good intention. Now, he could have saved writing, stamps and time, if he had given the remedy in the above, especially as it is "for the benefit of the readers," etc. Perhaps he does not see fit to *give it away.* Correct on his part. On our part we do not care to *give away* our space. We do not object to doing so when it is necessary, but we cannot be *duped,* nor will we allow our readers to be, by such a *trick* as the above. We withhold the name. We will be thankful for anything that will "benefit our readers," but if persons wish to take advantage by such methods as the above, it is of no use to send them. *The trick won't work with us.*

EGGS ARE CASH.

The fluctuations of gold and silver, and the redeeming of paper with metal, are not matters here for discussion, but eggs are *cash money* anywhere. Mr. N. D. Forbes, in the *American Poultry Yard,* gives the following:

"A Maine farmer went shopping the other day and paid for his purchases with twenty-five dozen of eggs. And how much do you suppose he bought? A correspondent of the Bangor *News* gives the list as follows: One barrel flour, one bushel meal, one pound of tea, one pound coffee, five pounds sugar, one pound soda, one gallon kerosene oil, one bar soap, one gallon molasses, one-fourth pound tobacco, one-half gallon vinegar, one package mixed spices, one calico dress pattern, and when he got home his wife scolded him for forgetting the salt."

It was a pity that the poor fellow received a scolding about forgetting the salt, after buying so many articles with twenty-five dozen eggs. This happened in winter, in a cold climate, and the eggs were bringing in goods at a season when nothing else could be sold off the farm.

THAT SLEEPY DISEASE.

There is a difficulty often met with. Little chicks become stupid, go to sleep and appear to sleep themselves to death. Some style it the "sleepy disease," and in some communities it destroys the chicks rapidly, especially in warm weather and in a warm climate. A lady reader writes us about it, and we give a portion of her letter. She says:

"I lost nearly all of my chicks with sleep ydisease. They would stand and sleep, with their bills resting on the ground. The chicks are from a cross of Buff Cochin male and common hens."

The sleepy disease is nothing more nor less than *lice*—the large lice on the skin of the the heads and necks. Whenever a chick droops, and you do not know the cause, look *closely* for the great blood-sucker on the head, and rub two or three drops of sweet oil on the head of each chick twice a week.

WHITE ON LANGSHANS.

Many inexperienced persons are puzzled when purchasing Langshan eggs, the chicks come out black and white, instead of black. They usually become black on reaching maturity, but a few white feathers remain on the feet in the best of flocks. The Langshan should have white skin, pink webs between the toes, and be as free from yellow on the skin or bottoms of the feet as possible, as such indicate Cochin blood.

THIS paper is only fifty cents a year, but it is worth fifty dollars.

IF you have not had the bound volume for 1892 you can get it now.

FOWLS FOR THE TABLE.

Of all table fowls the well-bred Dorking still stands pre-eminent. The reasons for this are: First, it is a large-sized bird, and its meat is tender, savory and juicy; at the same time, sufficiently firm in texture. Second, the breast is very broad, deep and projecting. This is the most valuable part of the fowl, and in the Dorking enables one to cut extra wide slices from it. The shoulders are also quite full, which is another good point in its favor. Third, the body is a long parallelogram, thus making it in comparison to other fowls like that of the shorthorn cattle. The Houdan is the nearest approach to the Dorking of all other breeds, both in size, good shape and qualities of meat. As it carries a fifth toe and a top-knot, it is general thought to be a cross of the Dorking or the Poland; yet I have seen it stated in a French publication that they have been known in France for upwards of 300 years. The Game fowl is first quality, but its meat is of different flavor from the two above, resembling that of the pheasant, and for this reason many prefer it. The size varies from large, medium to small and it does not carry so much meat on the breast in proportion to its size as the Dorking and Houdan. This is deep, but more rounding and less projecting. Some other breeds of fowls are well-shaped and moderately full in the breast, among this I found the Dominique superior. Most of the Eastern fowls are deficient in a good breast, save the Langshans, which is said to be pretty fair in this point. The others, except the Brahma, now and then, run too much to rump, where they are extra large. As the meat here is not equal to that on the breast, and is rather course, they do not excel as table fowls. But the chickens grow large rapidly, and as people generally are not particular as to the quality of poultry, they sell well and are popular with the public, their extra size being their chief merit.—*Correspondent in English Live Stock Journal.*

OAT PATCH BY THE HEN HOUSE.

"Some ten years or more ago, while we were on a visit to our mother's home in the country, it was generally remarked how well the hens were laying," says *Rural Home.* "They were only good common hens, of no particular breed, but they were shelling out the eggs at that time. The hens looked very bright and healthy, their combs were red, and they were either singing or cackling all day long. They were seldom seen about the house, excepting very early in the morning or late in the evening. The balance of day, in fact, nearly all day, they were nowhere in sight. This fact struck us a little singular, and so we decided to investigate. The hen house was at the lower end of the yards, with openings into a young peach orchard. This orchard covered perhaps two or three acres, and it had been sown in oats. At the time we were there the oats were about ripe. The ground was not overly rich, and the oats straw was rather short, although the grain was pretty fair and heavy. Running through the oats patch, or rather down at one side, was a small woody ravine with a little stream of water in it. This ravine was a cold retreat for the hens in the heat of the day and the leaves that covered the ground was a capital forage ground for them to scratch over, and to hunt for bugs in. But the oat patch was the chief delight of the hens and in it they spent the most of their time, and the way they could bend down the straw and strip the grain off was a caution. Then there were plenty of insects throughout the oat patch; and, taken all in all, those common hens had a picnic of it, and it was no wonder that they laid well. We watched those hens working there, day after day, and we thought then of the many opportunities the farmer has to utilize his hens to make money out of them. A patch of grain near the hen house may be quickly and easily sown, and the benefit the hens will derive from such forage ground is beyond estimation."

A VERMIN PREVENTIVE.

I practice a very simple and effective way of keeping my fowls free from vermin, vulgarly called hen lice. For the use of thirty fowls running at large I have in my hen-house a box about three feet square and eighteen inches deep, open at the top. In this I put a pailful of sand or road dirt, a pailful of air-slacked lime, a pailful of wood ashes, five pounds of sulphur and one pound of insect powder (pyrethrum.) About once a week I mix with this a few quarts of corn, and then it is fun to see the hens get in and scratch. No kind of vermin that infests fowls can survive this treatment. Scabby legs, produced by a very small insect, are also prevented by it.

I have a roosting place for my fowls to occupy in the summer in an unsheltered hen park. This is more comfortable and healthful for them t an a close, sheltered room, and less liable to breed vermin.—*Kansas City Journal.*

AN ACRE OF HENS.

Go ahead and build one house that will accommodate one hundred fowls. Put a partition through the middle, and keep your fowls in two flocks of fifty each. Divide your acre into four yards, and use the yards alternately. In the fall plough up two of the yards and sow to rye. As soon as it is up a few inches put your fowls in those yards. The rye will furnish green food until snow comes, in winter whenever the fowls can get at the ground, and the first thing in spring. Should the rye be likely to grow too high in the fall, just turn your cow in for a little while, occasionally, and let her feed it down. Keep your hens on these yards until ploughi g-time next spring, then turn them into the other yards where the grass will be nice and fresh.

Plough under what is left of the rye, and plant the yards to corn and sunflowers. We have kept fowls in that way—fifty in a flock, one hundred in one house—and there was not a case of sickness among the old fowls during the entire year. And we made over one hundred dollars in clean cash from the sale of eggs from those one hundred hens; so we do not hesitate to declare that more than twenty-five fowls can be profitably kept in one flock. No; we didn't sell any of the eggs at fancy prices; they were sold at the average price of twenty cents a dozen. Ask yourself if you have an acre of land within the limits of your farm that pays one hundred dollars, or even fifty dollars.—*Fanny Field, in Prairie Farmer.*

LICE.

Mrs. Emma J. Melette, writing in the *Denver Chicken,* as follows: "Do not use sulphur, as it is liable to do harm; nor carbolic acid, because it is needless; nor kerosene, because it will blister and take off the skin. Common lard is just as good, even as olive oil, but it must be warm, and the only way to put it on successfully is with the finger. A dirty job? Well, yes, it is, and if you happen to be at all sensitive or nervous it will make the cold chills run down your back to see how many heads of lice one square inch of poor little chicken-head can contain. In putting on the grease always grease clear around the lower part of the neck, for a greased ring they dare not cross, and many will be killed that otherwise would have escaped in the down of the body. Put just a little under each wing, and a little around the vent. It is not a very good plan to let the chickens get wet till the grease is dry, but I have greased them thus by the hundred, and have never lost one. When the effect of this is gone dust them well with Persian insect powder, and if they have a mother dust the mother also. It does not pay to get an old, stale, poor quality of this powder; better pay more and get good. There have been too many good things said of the dust bath; it will not do a hundredth part of what it is recommended for; which same also may be said of sulphur. Sulphur has no place in the poultry yard; it possesses no economic value; lice will live and thrive in it, while it fed to growing chickens and ducks it is liable to cause a multitude of ills and ailments. But of lice again—a good hot white wash is most excellent to rid the house of lice, but it must be hot."

DUCKS AS MOTHERS.

A correspondent of *Land and Water* thinks that it is better to let the ducks hatch their own eggs than to set them under hens. He says:

"I know it is a popular belief that ducks are careless and indifferent mothers, so far that a custom prevails with keepers of setting ducks' eggs under hens. I think both this principle and this practice are wrong. The only advantage hen mothers have over ducks is that they are ready to set earlier in the year. Apart from that, I believe there is not any advantage in such a custom. From my own observation, I can say that hens kill many more young ducks than duck mothers do. Naturally, the feet of a hen are not calculated for treading about among little things which slide and struggle along the ground. Her chicks can jump and spring out of the way of her feet; but I have frequently seen a hen stand with great outspread toes upon the back of a young duckling who was vainly struggling to get from under it, the hen all the while reaching after something to eat, apparently unconscious that she was slaughtering her pseudo offspring. A duck's feet are all one, are flat and splay, and she shuffles about without lifting them much from the ground. I do not remember ducklings being ever trod upon, or, as the people about here say, 'squabbled' by a duck mother.

"No doubt we are a very wise people in our generation, but from all eternity God has been wiser than we; and hens were intended to hatch and bring up chickens, and ducks to rear young ducks."

EGG-TESTERS.

A cheap egg-tester is made by taking an oblong box and knocking out one end, set the box on its closed end and tack the end piece knocked out on one side (the height of the flame of the lamp when placed inside the box) through which make a hole the proper size to hold an egg; line the hole by pasting around its edges some black felt to give a soft surface to rest the egg against and also prevent rays of light coming out around the egg; now tack a piece of bright tin or anything that will act as a reflector on the inside of the box and opposite the whole to which the egg is held.

Another egg-tester is made by rolling stout, dark-colored paper around a piece of wood about a foot long the size of an egg in thickness, but a little larger at one end than the other. Place the egg to be tested against the large end and hold the other end to the eye, letting a bright light shine through the egg.—*Midland Poultry Journal.*

CONDITION POWDERS.

The Maine Experiment Station has recently made an examination of two brands of the various cattle foods or condition powders which are reputed to have such a wonderful effect on the appetite and condition of cattle and horses. Following is the station's analysis of these foods, together with the analysis of linseed meal, new process, the average of fourteen analyses; and that of wheat bran, the average of eighty-eight analyses, added for comparison:

Marvin's food, 10.0 moisture, 5.5 ash, 35.5 protein, 9.3 fiber, 37.3 nitrogen-free extract, 2.4 fat.

Linseed meal, new process, 10.1 moisture, 5.8 ash, 33.2 protein, 9.5 fiber, 38.4 nitrogen-free extract, 3.0 fat.

Pratt's food, 12.4 moisture, 5.8 ash, 13.7 protein, 5.9 fiber, 56.8 nitrogen-free extract, 4.0 fat.

Wheat bran, 11.9 moisture, 5.8 ash, 15.4 protein, 9.0 fiber, 58.9 nitrogen-free extract, 4.0 fat.

The analysis of this food and its general appearance leave little room to doubt that it is made up of linseed meal, with the addition of small quantities of fenugreek, camphor and ginger. A careful examination of the ash shows that it contains no mineral salts in excess of the amounts usually found in linseed meal.

Marvin's Food is put up in boxes containing about one pound each. For horses, cows and sheep, the dose is two tablespoonfuls to each animal, to be mixed with the other food. For swine and calves, one tablespoonful is recommended. They claim as follows:

"This food, fed to stock once or twice a week, will keep them in excellent condition. Use it for all causes, colds, coughs, loss of appetite, distemper, heaves, hide-bound, etc."

"For stock out of order, run down, or in a wornout condition, it has no equal."

"This food is prepared from the best known condiments of the vegetable kingdom."

If Marvin's Food has any value above that possessed by linseed and cottou seed meal, it must be due to the presence of the condiments mentioned. While these materials have their place in the *materia medica* of the veterenarian, they should be used with judgment and with some reference to the wants of the animal. If fed in the quantities recommended it is difficult to see how any bad effects could be produced. On the other hand it is equally improbable that benefits would result from the application of such mild doses.

In this connection it may be well to consider the cost. Fifty cents a pound is at the rate of $1,000 per ton. In view of the probable cost to the manufacturers, this seems an exorbitant price. Whether the farmer can afford to pay it so long as any doubts exist as to the benefits to be derived is a question that should be carefully considered. One may well be excused for looking with suspicion upon a remedy that may be used both in health and disease, and for all causes."

FEEDING USELESS ROOSTERS.

It may not be known to some that it is not necessary to keep the roosters after the hatching season is over. The hens lay as well (if not more frequently) when not in the company of the male, as when with him, for laying is not voluntary but an involuntary proceeding on the part of the hens. If they are supplied with the proper food and the conditions favorable, they cannot cease laying unless from natural causes other than those connected with the rooster. And in the summer, when eggs are cheap, they may be preserved for winter use with more certainty if laid by hens not mated with roosters, as experiments have demonstrated that a fertile egg will not keep one-half the length of time as will those that do not contain the germ of a chick, and the roosters may therefore be disposed of with advantage.

POULTRY ON A SMALL AREA.

JOHN YATES, GUILFORD, CONN.

We built a brooder house last year, 40x12 feet, with posts six feet in the rear and three feet in front. It is heated by a coal stove, with a one and one-fourth inch pipe, filled with water supplied by a tank. The hot water furnishes the heat for the brooder. We had to overhaul the brooder this winter, so that we did not get any chickens out until about March 1st. We have two hundred or more out now, and more are coming. We are raising the barred Plymouth Rocks, and intend to keep as good stock as can be had. We are cramped for room, only having one and one-half acres. We are feeding cut bone, clover hay with wheat bran, some wheat and oats, but no corn to laying hens. We have 120 hens and roosters, and their feed costs about thirty-five cents per day. We think the POULTRY KEEPER is a very good authority on the chicken question, and we find many things in it that are well worth knowing. One man told me that there was not a dollar in the business. I do not believe that. Another said it takes three years to learn a trade, and poultry keeping is a trade as much as any other. This is only our second year, and we have learned some things; some of our experience came rather high, but we shall not forget it very readily.

RAISING CHICKENS ON FARMS.

In our poultry books we find many and various plans for raising poultry on a small scale for breeding or fancy purposes, but when we wish to rear fowls in large numbers, a different programme is required. The breeder of a score or two of chickens can easily keep them confined on a small area and furnish his pets with all the food they can consume, but farmers whose pastures are swarming with various insects—the best food for poultry—and whose grain fields need gleaning, should pursue an altogether different plan if the poultry is to yield the greatest amount of profit, especially if large numbers are to be reared. It is a well-known fact that a large number of living beings confined on a small space of ground induce disease; so fowls always do best if separated in small lots of from fifteen to twenty-five. In such lots, if scattered over different fields, they do better and grow faster than when all are roaming together, and do so on much less food, as they pick up many insects and seeds, each flock having its own range.

My plan, which I have successfully pursued for a number of years with my flocks, is to have a number of coops just large enough to comfortably roost about twenty-five full-grown fowls. These I place around on different fields, and as the ground becomes foul they are moved on fresh ground, thus securing a two-fold advantage, viz.: cleanliness and economizing manure. In these coops I place one or two hens with their broods, and, when the mothers show signs of laying, they are returned to the laying flock, and the young left to themselves or an extra cock as leader. These are fed and watered, unless running water is at hand, until the wheat harvest is over, when the coops and fowls are moved to the wheat stubble to glean. From the wheat fields they are transferred to the oat stubble. Here is a period of from six to eight weeks that the growing stock requires little or no feeding, thus saving a handsome margin if the number reared is large. During ploughing time a flock may be advantageously employed following the plow, picking up grubs and worms which they will readily learn to do. In this way finer and healthier fowls can be reared with less than half the food necessary when confined to one run.

I have shipped breeding stock to nearly every State in the Union, and have received many letters admiring the beauty of form and size of fowls. Under the above system, fowls get natural exercise, hence a fine form and good size, and freedom from disease.—*H. H. Flick, in American Stock Journal.*

GOOD BLACK COLOR.

The Black Cochins, Black Langshans, Black Minorcas, and other fowls, required to have pure, solid black plumage, have a serious defect, one which it is almost impossible to weed out, and that is the purplish tinge or purple barring found in their plumage. It is found in the neck, the feathers in back, tail and breast, and detracts very much from the brilliancy and beauty of their color. Sometimes the entire plumage manifests a general purplish cast, but in most cases bars of purple will extend across some or many of the feathers. This defect is discounted from one-half to one point in every section when it is found, which in extreme cases lowers the score about three points, and which, in some cases, in specimens otherwise high up, causes them to lose every place in the list of prizes.

The true color of black fowls is intense black with a reflection in good light of a deep greenish shade; in fact, they should fairly shine with this lustre, as it very much enchances their beauty. Not only this, but it is the true color, and fowls properly managed and kept will show it if care has been taken in their breeding. We have been told that fowls, male and female, both showing this high and very desirable color, if mated together, would produce the purplish barring, and that a male of high color mated with a female of dead or dull black are more certain to produce good color in their progeny. This may be true; theoretically it is inconsistent. It would seem to be good reasoning to assume that if both male and female were of good color, that a larger percentage of their progeny would be good, particularly so if continued for a series of generations, than would be the first mentioned mating.

Breeders should try these matings, to the end that it may be generally understood what are the effects of such matings. Bear in mind that all black breeds are similarly affected. In a class of Black Sumatra we recently noticed that both good black and also barring in purplish black was plainly shown in various specimens, so much so as to be noticeable in the general effect.—*Fancier's Gazette.*

INCUBATORS AND BROODERS.

This book is No. 2, and is intended to give information in regard to incubators and brooders, and is by P. H. Jacobs, who has given incubators his attention for many years. Its price is twenty-five cents, but to those who subscribe, or renew, we send the book, with the POULTRY KEEPER one year, for sixty cents. Printed in brevier type, and full of designs and illustrations.

I breed the very best S.C B. Leghorns and S S Hamburgs. eggs $1 per 13. A L. Cary, Lewis, Ohio.

Black Minorcas and Silver Wyandottes. Eggs, $1.00 per 13. Frank Hardwidge, Poneto, Indiana.

For sale.—Trio Black Minorcas, 1 B. P. Rock Cock and Ckl, fine birds. Write. Ed. Hart, Owego, N. Y.

After June we sell 30 eggs (no less sold) for $1.75, S.S. Hamburgs, Lt. B., B P. Rocks, Br. Legs., W. and B. Minorcas. Enterprise Poul. Yds., Annville, Pa.

Send 50 cents to **Wetrick Bros.** Indiana, Pa. for best instrument for curing Gapes. Best discovered, simple and sure. Agents wanted. Wetricks sure cure for chicken cholera, 25 cts. by mail.

40 acre Fruit and Poultry Farm for sale. Six roomed house, barn, four incubators, hot water brooder, 2,000 capacity, and eight fowl houses. Price, $2,200. Address, Susan Reed, Hammonton, N. J.

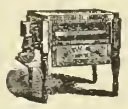
WHITE PLYMOUTH ROCKS. Eggs and birds for sale. Eggs by the hundred for incubators. **W. M. BAKER, East Orleans, Mass.**

W. F. B. SPANISH. Eggs $1.00 per 13 In June. Hatch well this season. Young cocks for sale. Circular and my photo free. **J. BENNETT, Sunman, Ripley Co., Ind.**

SITUATION WANTED. By a poultryman with life long experience in the poultry business. Willing to work and has best of references. Address **"POULTRYMAN," 14 Greenwich St., New York.**

Owner is going to Germany! Brooder Plant for sale cheap. 5 acres, part Straw and Redberrys. 8 room house, 2 barns, 80 foot poultry house, 80 foot brooder house, horse, cow, chickens, ducks, 3 wagons, farm implements. Emil Tradelius, Hammonton, N. J.

Not an Embryo Killer but a hatcher of all strong germs, is the **NEW ERA.** Get a circular—out of curiosity if nothing more—and don't forget us, for you will know us next season. **CLIFTON R. BRIDGES, North New Salem, Mass.**



BUY THE BEST. The Improved Monitor Incubator. Hundreds of Testimonials **from all parts of the world** as to its merits over all other makes. Large book with cuts for stamp. Address **A. F. Williams,** Bristol, Conn.

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.

BOOM THE LEADERS!

The two best poultry papers on earth are

FARM POULTRY..... 50 cts.
and
POULTRY KEEPER..... 50 cts.

We will send **both,** for one year, for **only 70 cts.**

I. S. JOHNSON & CO., Boston, Mass.

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Caps and Nails. Sample and circular free. **A. F. SWAN,** 38 Dey St., N. Y.

OUR CATALOGUE FREE
POULTRY SUPPLIES
HARVEY & WATERS BUFFALO N.Y.

We save hundreds of dollars to our customers by crating our Bone Cutters so that it goes as 4th class freight. Webster & Hannum, Cazenovia, N. Y.

PARKER POULTRY YARDS, SOUTH DAKOTA, is for sale. For information address **Theodore M. A. Kvilhaug, Parker, So. Dak.**

BUFF LEGHORNS

The best five per cent. after two years culling.

Choice cockerels. Eggs in season. Parent stock imported by myself direct from **Mrs. Lister Kays'** best yards.

C. W. BISHOP, VERONA, N. Y.

HATCH CHICKENS BY STEAM

With the Improved **Excelsior Incubator.** *Simple, Perfect, Self-Regulating.* Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made. Circulars free. Send 6c. for Illus. Catalogue. **GEO. H. STAHL, Quincy, Ill.**

THE GREAT AMERICAN TEA COMPANY

A PRACTICAL EVERYDAY **COOK BOOK FREE** containing over 2,500 tested recipes, 320 pages, bound in cloth. Don't fail to get the **WATCH-CLOCK** the greatest novelty of the age. For full particulars address **The GREAT AMERICAN TEA CO., P. O. Box 287. New York City, N. Y.**

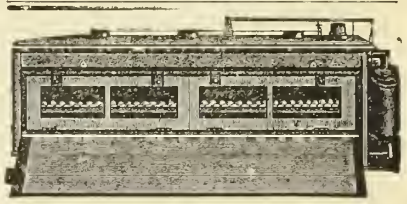
NORTHUP'S

Bl'k Minorcas

Have won 133 1st, 96 2d, 12 3rd and 2 4th prizes in the last 16 months, competing with all the leading strains and have never lost a special for large size. 1893 catalogue gives dates and places of winnings, and large cut of Rose Comb Black Minorcas.

Geo. H. Northup, Box 150, **Raceville, Wash. Co., N. Y.**

For sale at a bargain:—60 fine Brown Leghorn hens and 6 cocks, 15 Light Brahma hens and 2 cocks, 25 Plymouth Rock hens and 3 cocks, 5 Pekin Ducks and 1 drake and 1 fine Game cock. All of the hens and ducks are now laying and in the pink of condition. Also three 200 size Excelsior Incubators, 15 Olentangy Brooders, 125 chick size; and **1 No. 10 HAND OR POWER MANN BONE CUTTER. INCUBATORS, BROODERS AND BONE CUTTER ARE ALMOST NEW, MOST OF THEM HAVING NEVER BEEN USED AND ALL ARE FIRST CLASS** Address **E. C. HEVERAN, 157 Lake St., Chicago, Ills.**



Won at Madison Square Garden, 18 2. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular. **Jas. Rankin, South Easton, Mass.**

KNAPP BROS.

ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD

WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.

Proof—The records at 29 of the **leading** shows during the past ten years—**Highest Honors every time.** We sell annually **hundreds** of **Exhibition** and **Breeding birds** but **never at any** price, our **best** tested **breeding** stock, $400 in **one** order at a recent sale, for 18 show birds. **OUR MATINGS** for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce **sure winners** and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. **100 fine breeding Cockerels,** separate or mated up in **pairs, trios or breeding pens** to suit customers, at reasonable prices for quality. **EGGS** for **HATCHING** from our **choicest matings,** at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address

KNAPP BROTHERS, BOX 501, FABIUS, N. Y.

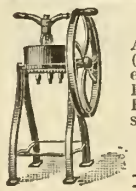
LAMSON'S PLYMOUTH ROCKS,

BARRED AND WHITE.

PRIZE WINNERS EVERY TIME. EGGS FROM 30 GRAND BREEDING PENS, at $3.00 per 13. $5.00 per 26. $10.00 per 65. MORE PRIZES GIVEN THIS STRAIN THAN ALL OTHERS. Order eggs at once. Stock for sale at low prices. Fine circular and price list free.

GEORGE L. LAMSON, Jr. Box 2, **WEST BOYLSTON, MASS.**

MANN'S CELEBRATED BONE CUTTERS.



Awarded 1st and 2d prizes at both Rochester (Fair) and Madison Square Garden (Poultry Show) over all other exhibitors. No other bone cutter ever yet received even a 2d prize in competition with it. Four Silver and Bronze Medals, eight Diplomas and ten First prizes received. Forty-eight editors of such papers as Farm Poultry, Poultry Keeper, etc., etc. endorse it. Its superiority is unquestioned. Stamp for Illustrated Catalogue, free if this paper is mentioned.

F. W. MANN CO., MILFORD, MASSACHUSETTS.

A BATCH OF QUESTIONS.

Quite a number of inquiries are sent us with no name or address—only the initials. This is a mistake, as we prefer to write readers in cases of emergency. Some letters reach us just after the paper is on press, hence they must wait a month.

The Texas flea seems to be a gentleman down in Georgia. A writer at Irby, Ga., has been having some trouble with them in his neighborhood, and writes:

"Some of my neighbors are much troubled with Texas fleas on their fowls. How can their appearance be prevented in my yard, or how destroy them should they get in."

Really, we never saw a Texas flea, and do not know if he is as large as a lobster or as small as some of the sand fleas that we have up our way in New Jersey. A Jersey flea cannot be prevented from doing *anything* it pleases. If one supposes he is not wanted, he at once invites all of his family connections, so as to hold high carnival. It would be well for Georgia to swap places with some other State, so as to get as far away from Texas as possible. The free use of coal oil will drive away our New Jersey fleas until they have time to catch a long breath, but when one ceases the remedy the fleas return. Just how to get the best of a flea is above our comprehension, but we suggest kerosene (coal-oil), kerosene emulsion, lime, solution of copperas, soapsuds, etc., used liberally everywhere. A sign, with "fleas wanted," would be of some value, as the flea always does just what you don't want him to do.

Alabama also sends an inquiry, a lady at Activity writing us as follows:

"Please state why the white of an egg is sometimes very bloody when fresh layed?"

It is due to the rupture of a minute blood-vessel while the egg is in process of formation. It is a difficulty that will soon pass away. It occurs mostly with pullets in high condition.

Ohio contributes something, too, as the following from Mount Vernon will show:

"1. What causes the combs of my chickens to turn blue? 2. What makes them sneeze just after eating their morning mash? 3. Is rye a good food for chickens in summer?"

The comb of a healthy fowl is red. If it turns blue it is an indication of illness, but the blue does not explain the disease, nor is blue comb of itself a disease. We believe that the hens have taken cold, which causes the sneezing, probably from a draught, and a good remedy is to feed stimulating food, such as lean meat, adding a teaspoonfull of red pepper to a quart of the morning mash, with which the meat may be mixed. Rye is an excellent food.

A reader in Indiana, who lives at Walnut, is losing his chicks. He says:

"My young chicks are dying for me in spite of all that I can do for them. Their vents are clogged, and they have diarrhœa. What can I do?

As the reader does not state whether he uses hens or brooders, or the *kind* of brooders, nor gives any details of management, he leaves us to *guess* at the cause, which we believe to be *lack of warmth*, especially on damp days.

An inquiry about incubators comes from Red River, Ohio, as follows:

"Will an incubator, where the temperature is two degrees higher in the centre than at the outside, do good work. Would it not be better, with such a machine, to change the inside trays out and the outside ones in, every time the eggs are turned?"

A variation of two degrees at the centre will do no harm provided the method of changing the trays, as suggested by the writer, is practiced. It is usually done by all operators.

We wish to say to readers that in sending inquiries they should give *full particulars*. Remember that we are hundreds of miles away, and must know *all the facts*. We desire to assist you, but we cannot do so unless you take pains to let us know everything. Write in a plain hand, and always give your name and post-office.

WHICH IS THE BEST BREED.

If we were to claim the Light Brahma to be the best breed, we would at once find ourselves confronted with hundreds of testimonials and piles of evidence in favor of other breeds. If there was only one *best breed*, then every breeder would now be breeding it and no other. There are, however, a large number of best breeds, for the breed that may be most serviceable with one person may not prove profitable with another. As the N. H. *Mirror* remarks, if all of the different breeds could be put to a test as egg producers, the difference in the number of eggs laid by the most prolific and the least productive breed, in one year, would not amount to ten eggs provided the conditions were favorable for each and all of the breeds, yet there is always a preference for the "best breed" (which usually means the one that lays the greatest number of eggs), and this partiality is at the sacrifice of many other essential qualifications than that of egg production. Of what value is a breed if it is not adapted to the climate, and how can it prove profitable if it demands greater care than can be bestowed upon it by the farmer? Its advantages in one direction may be more than balanced by defects in another.

The best breed for the farmer who has a wide range and who compels his fowls to be nearly self-supporting would not be considered the best by him who is compelled to confine his hens in yards, nor would the breed that is best for New England be found as suitable for Texas as would some other breed that would receive but little recognition in this section. If we were selecting a breed we would have but one qualification to govern us in our decision and that is hardiness. If a hardy breed is chosen, it means a saving of labor, few sick birds and smaller expenses in every department.

When one selects a breed that has a reputation for producing eggs, the first consideration should be the adaptability of the breed to the climate. It is a matter of receipts and expenses. If there is a saving of the cost in managing a flock, the profits will depend upon the difference between the receipts and expenses more than upon the number of eggs produced in a year.

WHAT TO DO WHEN HATCHING.

A reader at Manteno, Ill., who has had good success mixed with his misfortunes, desires some points on how to work just when the chicks are coming out of the shells, and his letter will no doubt be of service. He says:

"I would like (sometime when you have room) for you to give, in your paper, how to do when the chickens are hatching. After fifteen or twenty are out of the shells, I feel obliged to take out the thermometer, as they keep traveling over it, and I am afraid it will get broken. Then how do you know what the temperature is? While my first hatch last year was good, since then I hatch about thirty per cent. of fertile eggs. My first hatch come off the 18th of March last year, with 120 chickens out of 151 eggs. I cannot think it is my fault, as I attend to it faithfully, and I think it must be some fault of the machine."

In our issue of October, 1892, in an article entitled, "Points on Hatching Broilers," which contains nearly all the rules on the subject, we endeavored to cover the whole ground, and those who have not received a copy of that issue should not fail to get it, not because we seek to sell it as we do to avoid repetition. It will be found almost invaluable, as it answers nearly all the questions that can be asked on the subject.

One of the first things to remember, when the chicks are coming out, is not to disturb the eggs. If the thermometer is kicked over, no harm will be done, as the temperature will not change if the chicks are not taken out. When the chicks are removed the heat falls, as the animal heat of the chicks largely affects the temperature of the incubator.

Avoid *draughts* of air in the incubator when chicks are coming out, and it is safe to say that very little moisture is needed, as the warm moisture, when it meets the cold air, causes a loss of heat much greater than may be noticed. Evaporation of moisture from the eggs is always at a loss of heat. There is not as much liability of loss among the chicks if the air is somewhat dry, should cold air come in. When the first egg begins to pip, put in some wet sponges (rather than pans), shut the incubator, leave the chicks in, and do not disturb the machine until the hatch is over. The eggs should begin to pip on the twentieth day.

THE *Practical Dairyman* and the POULTRY KEEPER, both at one price—seventy-five cents.

Hundreds of our Bone Cutters in use. **Webster & Hannum, Cazenovia, N. Y.**

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in sea. Cir, W. A. Williams, Rome City, Ind.

Wm. T. Eastburn, New Hope, Pa. Breeder of Bl Min's. Great prize winners. Eggs $2 per set.

GET THE BEST. My White Turkeys have won every 1st prize at N. Y. and Phila., '92 and '93. Eggs, $5 per 13. D. A. Mount, Princes Bay, N. Y.

Bone Cutter already for power as well as hand. Warranted not to clog with green bone or clear meat. **Webster & Hannum**, Cazenovia, N. Y.

The smallest chick can eat cut bone cut with our cutter. **WEBSTER & HANNUM, Cazenovia, N. Y.**

No other Bone Cutter ever won a prize of **any kind** over ours. Beware of other misleading advertisements. Webster & Hannum, Cazenovia, N. Y.

Christian Sehman, Levin, Bucks Co., Pa., Breeder of prize winning B. P. Rocks, Indian Games, Buff Cochins and Wyandottes. Cir. Received 20 prizes in 1892 and 1893. Homer Pigeons and Ferrets.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. **D. M. POLING, Van Wert, Ohio.**

FISH-SCALE JEWELRY. Elegant, artistic and durable. For price list send to MRS. W. T. CATHCART, WASHINGTON, D. C., 516 3d STREET, N. W. AGENTS WANTED.

The Cream of the Earth! R. C. B. Legs., B. P. R'ks, Sil. Wyans., Pk. Bant. Nothing but high scoring birds in our breeding pens! Eggs and Stock in season. Cir. Clarence L. Smith, Loveland, Colo.

$20 PHOSPHATE FOR WHEAT. Sold to farmers direct. No Agents. **York Chemical Works.** York, Pa.

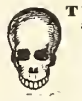
EGGS for setting from B. Plymouth Rocks, Brown Leghorns and Light Brahmas, M. B. Turkeys and Pekin Ducks, also breeder of Hamshiredown Sheep, English Beagles and Fox Hounds. A. Elwyn Strode, Box 1956, West Chester, Pa.

I am in no way connected with the **ELK ISLAND POULTRY CO. of ISLAND, VA.** My yards are situated on a 100 acre farm, four miles from Richmond, Va., on the R. F. & P. R. R. Therefore, please address me, **B. A. FOX, Richmond, Va.**

W. F. R. SPANISH. a specialty for 29 years. Average score of ten, last winter 95 17-20. Average score of pen, 93¼. Highest single score, 97. My breeders this season are superior. Eggs at $2.00 per 13; $5.00 per 39. Circulars and my Photo free. **JOHN RENNETT, Sunman, Ripley Co., Ind.**

BUFF WYANDOTTES, PLYMOUTH ROCKS. EGGS $5.00 for 13, from prize winning birds, while getting, get the best. **J. D. WILSON, Worcester, N. Y.**

KNAPP'S STRAIN.—W. Wyandottes, S. C. W. Leghorn eggs for sitting, **$1 per 13, for incubators in large quantities, $3 per 100 from cross breeds. Birds bred especially for laying. Stock for sale. E. H. NOXON, Elm Street, Ithaca, N. Y.**



THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and receipts for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn

INDIAN GAMES, Buff and Barred Plymouth Rocks, S. C. B. Leghorns. At Philadelphia, Feb. 17-22, we won on Indian Games, 5th Cock, 5th Hen, 2d and 3d Cockerels, 1st and 2d Pullets, 1st breeding pen. On Buff P. Rocks, 2d Cockerel, 1st and 2d Pullets. Choice breeding stock for sale. Eggs for hatching. Write for prices. **G. M. WOODS & BRO., Leaman Place, Pa.**

CHOICE STOCK FOR SALE after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH, Utica, N. Y.**

FOR SALE. Eggs from high-scoring birds, S. S. Hamburgs, W. P. Rocks, 2.00 per setting, Buff Leghorns "that are buff" from imported stock, $2.50 per setting. B. Turkeys, $3.00 per setting. I handle only the best birds that can be obtained for breeding. Birds hatched from my eggs when raised can hold their own in the best company. Address **MRS. A. M. HALLOCK, Columbus, O.**

GOLDEN WYANDOTTES. Get the best! The Original, Genuine McKean Strain. Eggs for hatching, $1.75 for 13, $3.00 for 26. Eggs carefully packed in baskets to safely go any distance and hatch well. Breeding and exhibition Golden Wyandottes for sale after Sept. 1st, 1893. Golden Wyandotte Chromos, size 8½x11 inches, elegantly Chrome Lithographed in six different colors. Price each, 3 cents; per dozen, 30 cents, postpaid by mail. Orders promptly filled. **A. J. FOUCH, Warren, Pa.**

Owing to change of business, George Purdue has placed all his breeding birds in our yards. The Leading Strains of Prize Winners wherever shown. Typical Shape, Pencilled Tails. Winning at New York, 1893. First and Special for most Typical Cock. First and Second for best Breeding Yards. Eggs from First Class Yards, $5.00 per setting; $10.00 per 3 settings. Other yards, $2.00 per setting; $5.00 per 3 settings. Birds a matter of correspondence. Purdue's strain of Lt. Brahmas. **CHAS. M. GRIFFING & SON, Shelter Island, N. Y.**

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,** 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. **Oldest Homœopathic Pharmacy. Established in 1835.** *The Poultry Doctor*, 85 pp., 12mo, cloth, 50 cents.

ST. BERNARDS AT STUD.

Ch. Scottish Leader, fee $10; Eboracum, fee $40; King Regent, fee $35.

COCKER SPANIELS AT STUD.

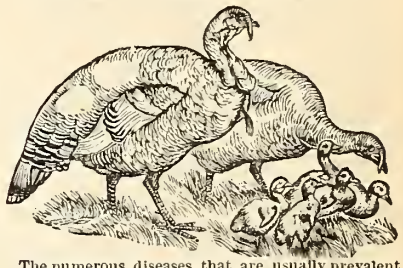
Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free.

SWISS MOUNTAIN KENNELS, Germantown, Philadelphia, Pa.

Indian Games, egg's $2.00 per 15; R. C. B. Leghorns, S. Wyandottes, L. Brahmas, B. P. Rocks, Pekin Ducks. Eggs, $1 per 15. Sat Guar. W. P. Curtis & Co., Props. Ransomville Poultry Yards, Ransomville, N. Y.

We are So Anxious That you should see our new circular on **Poultry Supplies.** It illustrates the most complete line ever offered. FREE **Johnson & Stokes,** —SEEDSMEN— 217 & 219 Market St., Phila., Pa.

HOW TO RAISE TURKEYS!



The numerous diseases that are usually prevalent among very Young Turkeys, may be prevented by the use of **CARY'S PILLS.** Send for Circular. **E. FOUGERA & CO., 30 North William Street, New York.**

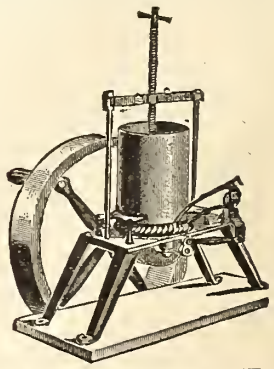
"Everything For The Poultry Yard." Poultry and Supplies MOST COMPLETE STOCK IN AMERICA. *PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.* *Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.* Do You Want Our Catalogue? *60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.* **MICHIGAN POULTRY FARM,** Geo. J. Nissly, Prop. SALINE, MICH.

FARMERS, IS IT POSSIBLE That you have not seen a copy of **FIELD'S FARMER AND STOCKMAN,** The best and cheapest 16-page, 64-column paper published

FOR THE FARMER AND HIS FAMILY. Non-partisan in politics, bold and fearless in its advocacy of right and justice.

SPECIAL DEPARTMENTS, (Conducted by competent and well-known writers) for the farmer, stockman and poultryman, etc., household, fashions and young folks.

A COMPLETE STORY IN EVERY ISSUE. No one can afford to be without it. Write for free sample copy—it will speak for itself—Agents wanted in every neighborhood. Liberal cash commission. Subscription 50 cents a year. Address **FIELD'S FARMER and STOCKMAN, 404 6-8 N. Seventh Street, St. Louis, Mo.**



Hundreds of these Bone Cutters sold and sales increasing.

WHY—They are sold at a reasonable price. It cuts all Green Bones **fine enough for small chicks.** It cuts **clear meat, vegetables** to perfection. It has an automatic feed. It takes in a large bone **4x6** inches. It is **warranted** for one year by hand or power. If you can break any part by actual use we furnish such parts free, during this time. It goes at a low rate of freight as cutters are all crated. Knives and cutter-head all one solid piece of chilled steel. Do not buy a Bone Cutter until you get our price. Valuable testimonials, etc. We will furnish you a superior cutter at a price you can afford to pay. Our cutter was entered at Rochester, N. Y., for exhibition and was very highly commended. It was not entered in time for a premium and therefore did not compete for a premium. Get our circular, which shows you good men's opinion on this cutter, by actual use. **WEBSTER & HANNUM, Cazenovia, N. Y.**

EGGS. Langshans, Minorcas, and Anconas, $2.00 per 15; $5.00 per 45.
IND. GAMES, $4.00 per 15. $7.00 per 30.
BUFF LEGHORNS, $5.00 per 15. $9.00 per 30.
BIRDS, Single, $3.00 to 10.00; Pair, $5.00 to $15.00; Trio, $7.00 to $25.00.
Send 4 cents in stamps for Illustrated Catalogue.

C. C. CERTAIN CURE For Cholera, Roup, and other diseases of poultry 50c. per lb. 5 lbs. for $2.

C. F. CHICK FEED is invaluable for young and growing chicks. $3 ₱ 50 lbs. $5 ₱ 100 lbs.

S. S. SURE SHOT is death to Chicken Lice and all Insect life. 25c per lb. 5 lbs for $1.

Sent by freight or express on receipt of price. (*Sixteen cents extra per pound if sent by mail.*) We ask you to give these preparations a fair trial, and be convinced of their superior merit. Every poultryman should send two-cent stamp for circular giving particulars.

F. A. MORTIMER,
Pottsville, Penna.

ST. BERNARDS.
(CHOICE STRAINS.)
PUPS FOR SALE.
Send stamp for circular giving full particulars.
MALES, $20.00 to $50.00.
FEMALES, $15.00 to $35.00.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Green bones, meat, vegetables easily cut with our cutter. Webster & Hannum, Cazenovia, N. Y.

WHITE Plymouth Rocks, exclusively. Circular free. **I. M. GAY, Attleboro, Mass.**

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY & WATERS, Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the **best** W. Leghorns, L. Brahmas and W. P. Rocks.

Eggs $1 for 13. Pure bred Lt. Brahmas and S. C. W. Legs. Mrs. B. W. Hartwell, Le Roy, N. Y.

Buff Leghorn eggs, $2 50 for 13; S. C. B. Leghorn and B. P. Rock, $1 for 13. A. C. Fulton, York, Pa.

Munger and Forsyth S. C. B. Legs. score 95½, eggs $1.50 per set. Cir. A. Kinzey, Douglass, Kan.

Get cir. ent and best of testimonials on our Bone Cutter. Webster & Hannum, Cazenovia, N Y.

Address Frank Buhler for Catal., eggs for hatching a specialty. 1903 N. Western Ave., Racine, Wis.

EGGS from prize winning B. Turkeys. Jos. W. Fleming, Buckingham, Ill. Stock after Sept.

For Sale.—L. B. C'k'ls, $2; L. B. P. R. S. C. B. Legs. eggs $1.50 per 13. Mrs. J. Scofield, Lisbon, Ills.

P. Rock and D. Brahma eggs for hatching. Obwebetuck Poultry Farm, So. Windham, Ct.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

WHITE FOWLS, Prize winners, 92 to 97. Eggs. W. Cochins, $2.50; W. C. W. Polish, $2; S. C. W. Legs., $1.50. Cir. free. Geo. A. Friedrichs, Erie, Pa.

Prize winning S. and W. Wyans., I. Game and P Ducks. Stock and eggs for sale, send for Cir. **M. H. LEIDY, Blooming Glen, Pa.**

Colchester Poultry Yards, Clark H. Otis, Prop., Colchester, Conn. Breeder of Bar. Ply. Rocks exclusively. 8 yards pure bred stock. Eggs $1 per 13.

Leading Strains S. C. B. Leghorn eggs for hatching from selected stock only, $1 00 and $1.25 per 15. Address Box 41, New Holland, Pa.

Home of the S. C. Leghorn. Eggs $1.50 per 13; P. Rocks and Lt. Brahmas, Eggs $2.00 per 15. Birds scoring 90 to 95 points. **H. C. HUNT, Deavan, I.**

Our Bone Cutter warranted. **WEBSTER & HANNUM,** Cazenovia, N.Y.

PIT GAMES ONLY, ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

FREE! Eggs free. Buff Leghorns. Ind. Games and eight other varieties. Stamp for Cir. **Enterprise Poultry Yards,** Annville, Pa.

BEATTY'S PIANOS and **ORGANS** $33 up. Want agt. Cat'lg. **free.** Address DANIEL F. BEATTY, Washington, N. J.

ROSE COMB BROWN LEGHORNS a specialty, also B. P. Rocks. Eggs $1.50 per 15, $2.50 per 30. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

WISCONSIN Poultry Farm. High class land and water fowls. 10 pp. Cat. Mention this paper, Harry Bassindale, Somers, Wis.

When you buy a Bone Cutter get one that will cut **clear meat,** the Webster & Hannum does this beautifully, without freezing summer or winter.

HOWELL'S Leghorns, White and Brown, won 35 prizes in 1892. Circular free. Eggs $2.00 for 13, $5.00 for 40. **C. E. HOWELL,** Elmira, N. Y.

JNO. D. SOUDER, Telford Pa.—Breeder of W. and Sil. Lac. Wyan., B. Ply. R'ks, B. S. C. Leg., B. Min. and L. Brahs. Eggs, $1 per 15; $3 per 60. Cat. free.

EGGS! EGGS! EGGS! From M. B. Turkeys, $1.50 per 9; S. C. B. Legs., $1 per 13; L. Brahs., $1.25; Part. Coch., $1.25. Address H. F. Barr, Dakota, Ill.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

You make a mistake if you buy a Bone Cutter without first getting our circular. **WEBSTER & HANNUM, Cazenovia, N. Y.**

PREPAID, 15 EGGS S. C. Br. Leghorns, $1.75 B. P. Rocks, $2.00 Other varieties. Circular free. Lock Box 198. **J. D. BRUBAKER, Sidney, Neb.**

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P.O. Goochland Co., Virginia.**

SINGLE COMB WHITE LEGHORNS. Birds scored and mated by **J. Y. Bicknell.** Eggs that will hatch, 13 for $1.00. Circular free. **W. W. COLE, LeRoy, Gen. Co., N. Y.**

STOP, LOOK AND LISTEN. $1.00 for 15 eggs. Finest stock of nearly all varieties of Poultry and Pigeons. Buff Leghorns, Indian Games, Wyandottes, etc., etc. Beautiful circulars free. **GEO. B. ULRICH, Annville, Lebanon Co., Pa.**

Our Bone Cutter does not clog with green bones nor meat. Webster & Hannum, Cazenovia, N Y.

PRINCES BAY POULTRY FARM, D. A. MOUNT, Mgr., Princes Bay, N. Y. Ind. Games, P. Rocks, W. Wyans. L. Brahmas. Mam. Pekin Ducks, W. Turkeys and W. Guineas. 14 entries at N. Y. and Phila. '92 won 8 1st prizes; 24 entries '93, 10 first and 6 seconds. Stock and eggs for sale. Cir.

B. Langshans, R. C. B. Leghorns, S. C. B. eggs, $1.50 per 15. **H. J. AHL, Carlisle, Pa.**

B. P. Rocks, Partridge Cochins and Dark Brahmas. Eggs $1.50 per 13. W. E. B. Dora, Loxa, Ill.

Why don't you send us $10 and get that Bone Cutter you have so long wanted, and get your hens to laying now while eggs are high, our machine is fully warranted. Webster & Hannum, Cazenovia, N. Y.

Nashoba Brook Poultry Farm, Brooks & Co., Props., East Acton, Mass. Breeders of pure bred and prize-winning Eng. Red Caps and Single Comb White Legs. Stock and eggs for sale. Cir.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass**

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock. Exhibition birds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Plidlimmon strains. P. H. Jacobs, Hammonton, N. J.

Golden Wyandottes. Eggs for hatching from handsome, large, fine, evenly laced Gol. Wyandottes, $1.50 for 13; $2.75 for 26. Orders promptly filled Stock for sale in fall. Ad. T. H. Hoskins, Warren, Pa.

W. & B. MINORCAS. Fine exhibition birds and first-class breeding stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

Cheap, durable, practical and warranted. You take no chances in getting our Bone Cutter. **WEBSTER & HANNUM,** Cazenovia, N. Y.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. **G. W. PRESSEY, Hammonton, N. J.**

LOOK HERE. If you want eggs of good stock at low prices, write to **A. F. KIMMEL,** Orwigsburg, Pa., Prop. of The Orwigsburg Poultry and Stock Farm. Cornish Indian Games and all leading varieties. Honest dealing my motto.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

ROUP CURE.—A new and scientific remedy for the speedy cure of Roup and Canker, and guaranteed to cure every case. Put up in 50c. and $1 bot. by express only. Half doz. small size, $2 50; large size, $5. Large size will cure 50 cases of Roup. Full directions for treatment with every bottle. Address **OWSLEY & DUNNINGTON,** Darlington, Ind.

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria bogs, address, J. R. Brabazon, Delavin, Wis

If any part of Bone Cutter should break in one year we furnish parts free. **WEBSTER & HANNUM, Cazenovia, N. Y.**

ARNOLD'S BUFF LEGHORNS
are the finest collection on earth, and you will miss it if you order eggs or stock before sending a 2 cent stamp for our new catalogue containing colored plate of Buff Leghorns, and the grandest lot of testamonials ever seen. Eggs $3 00, $5.00 and $10.00 per 13. Address **A. D. ARNOLD, Dillsburg, Pa.**

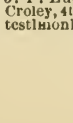
GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also POWER MILLS and FARM FEED MILLS. Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa

Don't get a Bone Cutter with which you are obliged to do all the work with **one hand,** with **ours** you can use **either** hand. Our machine feeds itself. **WEBSTER & HANNUM, Cazenovia, N. Y.**

MAPLE FARM DUCK YARDS.
The Largest Duck Farm in America
Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices **JAMES RANKIN, South Easton, Mass.**

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN** and **WHITE LEGHORNS, BLACK, BUFF and PARTRIDGE COCHIN.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

Green Cut Bone sufficient for 80 fowls cut in 10 minutes by hand Particulars free. **WEBSTER & HANNUM,** Cazenovia, N. Y.



THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes,** Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.,** by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,
ROLLS 150 FEET LONG.

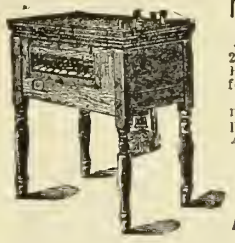
	12	18	24	30	36	42	48	60	72 Inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.40 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.

PETER DURYEE & CO., 215 Greenwich St., N. Y.

SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 50 or more rolls

Three Years in Succession at the Greatest of American Shows: (New York.)
We Have Won All Firsts on Indian Games in the open classes. A record no other breeder of any variety can equal.
At the great show at **MADISON SQUARE GARDEN, February, 1892,** we won **1st** and **5th on Cock; 1st, 2d** and **3d on Hen; 1st** and **2d on Cockerel,** and **1st, 2d, 3d, 4th** and **5th on Pullets.**
CHALLENGE CUPS for best hen and pullet. **GOLD SPECIAL** for twenty best young birds, and all other specials.
At Philadelphia our Golden Wyandottes won all firsts and seconds.
We breed **Champion Red Caps, Andalusians, Black Minorcas, White Ind. Games, Creve Coners, Ascels and Pekin Ducks.**
Stock and eggs always for sale. Twenty-page Catalogue free.
C. A. SHARP & CO., Lockport, New York.
The Home of the Indian Game.



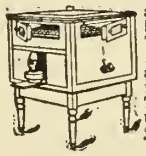
The Prairie State Incubator
takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 25th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $2.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.
Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
Homer City, - - - Penna.

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.
It is acknowledged to be "The Best Poultry Magazine Published" in the world.
Send for **Index** to last Vol. **free,** and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin** with **any** back number you desire.
Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. **"What has been done, can be done again." Remember** the price; 50 cts. one year; six months 25 cts.; sample free. **Remit** cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

"LIKE WILL BEGET LIKE."
700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cady," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. At **New York,** Feb. '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

Spratts Patent
Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N.Y

INCUBATORS & BROODERS
PAT'D.



Brooders only $5.00. The best and cheapest ever invented for hatching and raising Chicks, Turkeys and Ducks. 40 First Premiums, 1200 testimonials also eggs for hatching and fowls for sale of 40 varieties. Thoroughbred fowls warranted true to name. G. S. SINGER, Send for Catl'g. Cardington, O.

LIGHT BRAHMAS exclusively, large size, fine shape, well marked, extra hackles, leg and toe feathers, remarkable layers, almost non-sitters. Always win in strongest competition. At Bloomington, Illinois, Dec. 1892, 1st on cock, 94½; 1st and 2d on hens, 92⅛ and 91⅛; at Indianapolis, Indiana, Jan. 1893, 1st on cock, 92; 1st and 2d on cockerels, 95 and 94; 1st, 2d and 3rd on pullets, 95, 94½ and 94½. A prize on every bird shown. Stock for sales. Eggs in season. **ALFRED DOYLE,** **Morgan Park, Ill.**

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1 00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.90, postpaid. They make handsome and valuable books.
Address **Poultry Keeper Co.,** Parkesburg, Pa

The Webster & Hannum, Cazenovia, N. Y., Green bone Cutter has an Automatic Feed.

A NEW CATALOGUE & GUIDE to Poultry Raisers, the finest published, containing 8 colored plates and 40 fine engravings of poultry, with description of each variety; tells how to raise and manage poultry, plans for poultry houses, remedies for all diseases, 60 pages 7 x 10. Ready for distribution Jan. 15, '93. Send 10c. silver or stamps. Address, **C. C. SHOEMAKER, Freeport, Ill.**

Sweepstakes at Chicago, 1891
B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. **F. M. MUNGER, DeKalb, Ill.**

ONLY $1.10! CANNOT BE EQUALED!
FARM POULTRY (Monthly)..... **50cts**
POULTRY KEEPER (Monthly) ..... **50 "**
FARM and FIRESIDE (Semi-Monthly) **50 "**
MODERN COOK BOOK..... **50 "**
Total..... **$2.00**
All sent postpaid on receipt by us of cash or stamps, **$1.10.** Sample papers free. Address
FARM POULTRY,
Box F. P. BOSTON, MASS.

Scribner's Lumber and Log Book.
OVER ONE MILLION SOLD.
Most complete book of its kind ever published. Gives measurement of all kinds of lumber, logs and plank, cubical contents of square and round timber, stave and heading bolt tables, wages, rent, board, capacity of cisterns, cord-wood tables, interest, etc. Ask your bookseller for it, or sent postpaid for 35 cents. G. W. FISHER, Box 238, Rochester, N. Y.

WINNERS AT BOSTON, STONEHAM and BROCKTON, PLYMOUTH ROCKS, W. WYANDOTTES. Birds for sale. EGGS 1 setting, $2; 2 settings, $3; 4 settings, $5. CHARLES RIVER POULTRY YARDS, Newton Lower Falls, Mass. Send for Circular.

DOG TRAINING and How to Teach Your Dog Tricks. The instructions in this valuable little book are practical and ample for any amateur, and thorough humane. This work also contains a number of remedies for various ailments, and therefore is earnestly recommended to dog owners. It tells how to make a dog Answer to his Name—Give his Paw—Lie Down—Beg—Leap—Jump the Rope—Walk—Dance—Fetch and Carry—Bring his Tail in his Mouth—Roll a Ball—Walk on Stilts—Walk on Forelegs—Stand on Head—Sing—Make Believe Dead—etc. etc. Postpaid for 15 cents. Address Poultry Keeper Co., Parkesburg, Pa.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Secretary A. P. A.—Will you kindly give me the name and address of the Secretary of the American Poultry Association?—W. G. S., Mansfield, Ohio.

Geo. E. Peer, Rochester, N. Y.

Cottonseed Meal.—Is cottonseed meal of any value as a poultry food? Would it be well to feed it when fowls are moulting, or to chicks just growing feathers?—E. L. D., Nicholson, Pa.

It is a valuable food, but produces constipation. It may be fed in equal parts with linseed meal, one gill daily, with other food, to twenty hens.

Drinking Vessel.—How can a drinking vessel be constructed for little chicks so that they are protected from getting wet?—Mrs. H. T., Gibbon, Neb.

They can be purchased from Geo. J. Nissly. See Sept., 1891, issue. Also see letters in this issue, from our readers, on the subject.

Number for the House.—Would twelve hens be too many for a house 6x12 feet? If so, how many would do well in it?—F. E. H., East Claridon, Ohio.

The house will accommodate about that number.

Turkeys.—Which is the best breed of turkeys? How do the Narragansetts compare with the Bronze?—R. S. H., Huntingtown, Md.

Bronze and White Holland. The Narragansetts are very rare, and new blood difficult to obtain.

Cracklings.—Caponizing.—1. Are cracklings good to feed laying hens? 2. What is the price usually charged for caponizing chicks?—O. A. McG., State Centre, Iowa.

1. Yes, if not fed too liberally. 2. Address W. H. Wigmore, 107 South 8th St., Philadelphia, Pa.

Golden Wyandottes.—Do you know what breeds were used in bringing out the Golden Wyandottes? An Englishman tells me there is Golden Pheasant in them; is it true?—Subscriber.

Probably Golden Penciled Hamburg and Dark Brahma. The Golden Hamburg is sometimes styled Golden Pheasant.

Rheumatism.—We are losing some very valuable hens. Usually one leg first turns back, the toes drawing up, and the leg seems useless. Finally both legs give way. The comb remains bright, and the hen appears perfectly healthy other ways.—Mrs. M. L. T., Dillon, Mont.

The trouble is rheumatism, due to dampness. Hens thus afflicted are useless.

Minoreas.—What is the chief difference between the White and Black Minoreas, in regard to size, hardiness, prolificacy, etc.—F. R. S., Hornellsville, N. Y.

There is no difference between the two, excepting in color.

Black Spanish.—Would you please tell me what the Black Spanish has done? Have they gone out of the country, as I do not see them advertised in your paper?—W. J. T., Omaha, Neb.

They are an excellent breed, and are advertised in our columns.

Rattling in the Throat.—Several of our hens have a rattling in their throats. Will you please tell me the cause and cure?—J. A.D. Quinter, Kans.

Due to exposure to draughts of air from some source. Give ten drops daily of a mixture of one part spirits of turpentine and four of sweet oil.

Red Feathers.—When a few red feathers appear on the neck of a Black Langshan cockerel is it a sign of impure blood, or will they sometimes appear on the pure breds?—P. A. B., Sharp, Ky.

The red feathers are not always a sign of impurity, but it is better to avoid them and have your flocks as they should be—black.

Oyster Shells.—Where can oyster shells (ground) be had by the barrel or ton, and at the nearest section for this part of the State?—G. N. N., Troy, Pa.

Address C. A. Bartlett, Worcester, Mass., for prices.

Gravel or Crockery.—1. Which would you prefer for the bottom of a hen yard, the scraps of white ware pottery, such as old dishes, broken up fine, or gravel? I have both handy. 2. Is it best to keep the egg chamber of an incubator dark or let the light in through the glass doors?—C. C. H., Tiffin, Ohio.

1. Use a mixture of the gravel and broken crockery. 2. The incubator drawer should be dark.

Renewing Infertile Eggs.—Is it injurious to remove the infertile eggs from an incubator and substitute fresh ones?—Mrs. C. J. W., West Nashville, Tenn.

It is best to remove the infertile eggs, but fresh ones cannot be put in their place. The infertile ones will serve as food for fowls.

Fatty Degeneration.—I have a hen that only half moulted, retaining half of her old plumage, and half new. She was sick all winter, and I could not cure her. This spring she has been all humped up and moped around. I killed her, and cut her open to try to find the cause. The liver, gizzard and lungs were all right, but all the intestines were as large as a man's thumb, and her heart was in a sack like the skin in an egg, and full of watery fluid. Can you tell me what was the cause?—B. L. S., Pocatello, Idaho.

The loss was due to fatty degeneration, induced by lack of exercise and overfeeding.

Wants a Lamp.—I want to make an incubator after the plans of the POULTRY KEEPER and attach a lamp. Will it infringe on some patent? Where can I get a safety lamp?—Mrs. M. P., Urbana, Kans.

Get a lamp of any kind. No patent infringed. Try the hydro-safety lamp.

Meat Scraps.—Where can I get pure lean meat or beef (ground) and dried in form of beef meal?—J. W. M., Calumet, Iowa.

Address C. A. Bartlett, Worcester, Mass.

Battery for Regulating.—Which is the best battery to use to regulate an incubator? Last year we used two one gallon glass jars, with a copper plate and a piece of zinc in each jar, but it was not reliable all the time. It would work splendidly for a day or two, sometimes longer, and then through the night the heat would go up several degrees. We do not understand electricity, so could not tell the cause.—Mrs. J. A. C., New Trenton, Ind.

We never used a battery, as they are uncertain, hence cannot well advise.

Poultry Houses.—Where can I buy a good incubator? Also, where can I get a good book to show how to build a hen house?—C. N., Alma, Mich.

There are nearly fifty plans of poultry houses in the July, 1891, issue of POULTRY KEEPER.

Wants a Cross.—Our hens are half Houdans. I think of buying a setting of eggs to introduce new blood another year. Which would be the best—Houdan, Langshan, or Black Minorca? We wish to raise both capons and eggs.—H. W. W., Springville, Iowa.

Probably the Langshan would be the best for your purpose and climate.

Incubator and Tank.—Where can I get an incubator made with tank for hot water, and which is self-regulating?—Mrs. G. W. G., Tustin City, Cal.

The tank can be made by any tinner. We know of no one who makes them.

Heat in Incubators.—I purchased several back numbers of the POULTRY KEEPER, with plans for incubators in them, but cannot discover where the heat comes from.—W. J. K., Peoria, Ills.

The heat in the incubator comes from the boiling water, which the directions inform you how to use.

Thunderstorms.—Do thunder storms have any effect on chicken or duck eggs in an incubator, or in any stage of incubation?—Subscriber, Bloomfield, N. J.

We have never known of any injurious results or effects from thunder storms.

Eggs for Incubators.—Please send me the address of someone who buys eggs by the hundred for incubators, also those who sell them.—J. D., Winchester, Ind.

We have no means of knowing who sell or buy eggs except through the advertisements.

Buff Breeds.—Do the Buff Plymouth Rocks and the Buff Wyandottes breed true to feather? Also, are they well established, and equal to other varieties? Is the White Wonder fowl a good one?—M. F. S., St. Ignace, Mich.

The Buff Plymouth Rocks and the Buff Wyandottes are not well established, and are often off color. The White Wonder breed is a new but good one.

Rubber Bar.—Where can I buy a hard rubber expansion bar, to be used in an incubator?—E. M. H., Saylorsburg, Pa.

You can get the bar at any rubber store.

About Feeding.—I have a flock of thirteen hens, and get from nine to twelve eggs per day. I would like your advice about feeding them. I feed them in the morning without variation, cooked meat, raw onions, dry bread, potatoes, with enough meal to hold all together. I feed wheat at night, giving plenty of pure water twice a day, with the chill taken off.—W. E. C., Schuylerville, N. Y.

Your feed is correct, only you should feed but once a day, or you will have the hens too fat, as they pick up a large share of their food at this season.

Whitewash Sprayer.—Is there a pump or machine made that will throw whitewash from twenty to thirty feet, so as to do a good job of whitewashing? If so, where can it be obtained?—H. L. C., Winchendon, Mass.

Address Fred'k Schwarz, Fairfield Conn.

With or Without Lamp.—I hear so much about lamps attached to the Poultry Keeper Incubator, that I wonder if the hot water heating has gone by. I have fairly good success with my water appliance, but if the lamps are better will you so inform me?—J. C., Newton Centre, Mass.

The hot water incubator works best with no lamp.

About Wyandottes.—1. Is there a Wyandotte club in the United States? If so, who is secretary? 2. Are the Black Wyandottes recognized by the Standard? 3. Are the Black and Buff varieties of Wyandottes as good as the Whites? 4. Do leg bands injure the legs of young fowls? 5. Can the S. S. Hamburgs be crossed on the Wyandottes, and will anything be gained?—P. G. E., Amiret, Minn.

1. Address J. H. Drevenstedt, Beverly, N. J. 2 They are not. 3. Yes. 4. No. 4. Nothing is gained by the cross.

Vegetables.—Are such things as apples, turnips, potatoes, cabbage, artichokes, pumpkins and beets, good feed for laying hens in the winter? If so, should they be fed raw or cooked?—T. B. H., August., Ohio.

All such articles are excellent, and should be cooked, except the cabbage.

About Mating.—I have six Light Brahmas that are not feathered on the middle toe, and when I bought a cockerel the man I bought from told me to take a bird that had vulture hocks. Will the chicks be the same, or will I get good chicks by him? The man I bought from said it would make a good breeder.—N. W. T., Sparland, Ills.

The advice of the man was correct.

FEEDING FOWLS BY ELECTRICITY.

Why do so many people who attempt to keep poultry on a large scale so soon give up in disgust? I am no novice in the business, having kept a flock of from 50 to 300 for the past twenty years, but find that I still have the hen fever. For years it has been my ambition to be able to send at least one crate of eggs to market every day and guarantee each egg to be not more than twenty-four hours old. At least I see my way clear to make the venture with full confidence of success.

Here are a few of the facts that I have demonstrated to my entire satisfaction from actual experience.

1. A flock of fifty hens with unlimited range over the fields can be kept at a profit, one of the conditions being that they have a comfortable house, dry and warm, in which to roost at night and to which they can repair in cold or stormy weather. They are the best judges as to whether they shall go out or stay inside. I speak of full-grown hens.

2. If two such flocks are kept in houses eight or ten rods apart, they will almost invariably go home to roost.

3. If convenient and attractive nests are provided inside the house, the hens will lay in them instead of stealing their nests outside. My practice has been to keep the hens confined part of the day occasionally during the summer—probably about once a week. The result is that practically all the eggs are laid inside the hennery.

4. Ordinary hens well fed will lay at least 100 eggs each per year.

5. The cost per hen for feed is less than $1 a year.

6. I have shipped eggs to the New York market once a week for two years and received an average of twenty-two cents per dozen. I believe that when I am prepared to guarantee every egg not more than twenty-four hours old, I can secure an advance of at least two cents per dozen, making $2 per year from each hen for eggs alone.

7. Ordinarily the only attention each flock requires to be fed in the morning and supplied with drink for the day; the door is then opened and they thus get access to all parts of creation which they wish to explore. They get a feed of whole grain about 4 p.m., and the door is closed after they have gone to roost.

I have plenty of dry, stony, and somewhat bushy pasture land, and, putting the above seven propositions together, I can't for the life of me see what is to prevent me from covering it with small flocks of hens, which would thrive as well as though on adjoining village lots. My idea is to experiment with fifty hens in each flock and place the houses eight rods apart, allowing about 100 hens to the acre. I believe one man can attend to fifty flocks, and, if my calculations are correct, the product should be $4,000 worth of eggs, half of which should be profit. I expect the manure to pay for the labor of gathering it, and also the interest on the investment.

By the way, under the old plan of building yards and keeping hens confined, it has been preached that one must clean out the droppings every day. This requires lots of labor and away go the profits. Another trouble has been that in keeping large numbers in confinement the health of the hens is sacrificed. Here are two points which I hope to avoid by giving the flocks free range.

I have just completed my ideal of a poultry house to accommodate forty hens, using cheap land for free ranges, instead of building yards to keep the flocks separate, so that I need ordinarily make but two visits per day to each flock—one in the morning to supply them with their morning feed and fill the drinking fountains, while the evening feed of whole grain can be placed in an elevated feed box or hopper, and the door be opened.

That is all until 4 p. m., when the touch of an electric button in my dining-room will cause the feed in each elevated feed-box to fall to the floor simultaneously in all the houses and ring an alarm as it falls. I expect to see each biddy hurry away to her own home for her supper, provided she is not already there waiting the scattering of the grain. The next visit will be for the purpose of gathering the eggs. By the time I have got them started for market and eaten my supper, the biddies will all be on their roosts, when I can again touch my electric button, causing each door to close, thus making all secure for the night.

When I have the whole fifty flocks established, a horse and wagon will be necessary at the morning visit to carry a supply of food and drink. Whether the contents of the egg basket will call for the horse and wagon remains to be seen. The whole can be put in operation, electrical appliances and all, for the cost of a modern barn stocked with twenty-five good cows.—*O. W. Mapes, in Rural New Yorker.*

THE ORIGIN OF POULTRY.

The origin of the domestication of the common cock and hen is unknown, but is supposed to have been among the first conquests made by man. In the earliest human record it is stated that "the Spirit of God *moved* upon the face of the waters." Some commentators upon this passage say that the original word is *brooded*, which is taken from the idea of a hen brooding over its young. The Hebrew code regulating the use of food is altogether silent on the subject of fowls; but, as the pea cock was domesticated in the time of Solomon, or about 2,800 years ago, we have strong grounds for the belief that the more useful domestic hen, which, in its native state, belongs to the same region, must have been known long before that time. In most of the works on poultry the domestic cock is declared to be a pheasant, and we accordingly find it described under the proper time *Phasianus Gallus.* This conveys an erroneous idea. According to modern naturalists, more especially a Dutch write *Temminick*, our domestic cock must be separated from the pheasant (*Phasianus*) and form a distinct genus under the name, of *Gallus*, which had long since been *proposed for it by a French naturalist.—The American Poultry Book.*

BAD-FLAVORED EGGS.

Speaking of the ill flavor of eggs, *The Journal of Horticulture*, London, remarks that it is the result of one of two causes—either the food on which the fowls are fed or the substance on which the eggs are laid, and adds: This may be easily tested by shutting up a laying hen and giving her garlic or malted barley to eat. In a few days the eggs will taste of the food. We have tried this ourselves; and know it to be correct. Another theory is—but we cannot speak of it with the same certainty—that an egg laid on any strong-smelling substance will contract it. This is explained by the fact that the shell, when the egg is first laid, is comparatively soft and impressionable, and only hard after contact with the atmosphere. Let your birds be wholesomely fed on plain food and your nests be made with clean straw. Hay nests have a tendency to make eggs taste. Follow nature, and you will have nothing to complain of.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Scribner's Lumber and Log Book, Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks (Jacobs).

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

VOL. X. PARKESBURG, PA., JULY, 1893. No. 4

CONTENTS.

Double Poultry House, (Illustrated)—The Silo; Winter Green Food—Food and Brooder for Chicks—Failures in Hatching the Eggs—Bones as Food 49
Preserving Eggs 50
Making Nest-Sitters—Disinfecting Foul Places—Brooding Small Chicks. 51
A Gushing Circular—Why Chicks Die in the Shell—Poultry on Two Town Lots—Big Profit Per Hen—A Cure for the Gapes—Covered Runs. 52
A Good Start on a Small Space—Keeping the Floor Clean—More Interesting Than Ever—Poultry Raising for Women—Fighting the Jiggers—A Case for Consideration—A Solution Solved—Kicks a Pet Theory. Bottom Heat—Experience in California—Experiments in Moisture—From the Lands of Flowers—Our Chicks Building. 53
Are Hens Fat When Broody—Some Truths on Hatching—Gives Little Moisture—Irregular Feeding—Brief Remarks From Readers: Wants an Incubator—Use of Kerosene—Carbon-di-sulphide—Due to an Injury—Eggs Got Cold—Thanks the New Editor—Dampness—"Great" is the Word—Too Many Cocks—Chock Full—Good Laying—Shanghias—Lice—Quick Laying—Copperas for Roup. 54
Drinking Fountain—Made an Incubator—In for Life—Don't Like Scrubs—Big Eggs—Head Lice—Contrary Hens—A Good Showing—Feels Grateful—Double-Yolked Eggs—Don't Like Eggs—Origin of Plymouth Rocks—Prejudice Against Black Fowls—Crop Bound Fowls—Hatching Young Guineas—The Reliable Incubator, (Illustrated)—Buying an Incubator—Round or Square Roosts—Young Pullets. 55
Editorial Items—Brooder Houses—Sell Fowls in the Fall—Freezing of the Combs—Kerosene Emulsion and Lice—What is Cholera? 56
Read This Twice—Cold Storage—The Pigeon—Comparison and Scoring—Three Eggs a Day—Facts are Stubborn—Mistakes With Poultry—Too Much of a Good Thing—The League of American Poultrymen—Books at Five Cents Each—Rats in Poultry Houses—Disinfecting Foul Places. 57
An Incubator Safety Lamp, (Illustrated)—Feeding Select Foods—Cholera and Lice—Object Lessons to Beginners—Middlings as Poultry Food—Corn as Staple Food—Crosses as They Should Be—Capons in Summer—Rapid Feathering of Chicks—Cost of Food for Eggs—How the Feed is Wasted—Feeding Eggs to Poultry Pigeon Pens—Water-Proof Muslin for Runs—Exposing Eggs in the Nest—Bantams for Eggs Cutting the Wings. 58
A Light Poultry-House, (Illustrated)—A Big Chicken Business—Guinea Fowls and Their Value—Keeping Fowls for Pleasure—Egg-Bound Hens—Ex-Vice-President Morton's Broiler Factory—Dirt and Filth—Clean Eggs for Market—Handling Sitting Hens. 59
No Free Ads. for Him—He Says it is Buncombe—American Birds in England—"Winmen" and Chickens—Fresh Air for Hatching Eggs Summer Resorts—Raising Young Turkeys—Turpentine for Roup—Ground Bone for Food—Dry or Wet Food. 60
Poultry as a Farm Specialty—Got Things Fearfully Mixed—Going Into the Poultry Business—The Leghorns are Sitting, Two—Soapsuds and Lice—Feeding on the Ground—Colors as a Market Quality. 61
How Much Capital—Save this for Lice—The Tennessee Breeders—Piedmont Poultry Association—An Admonition—Green Food—Advertisements. 62
Advertisements. 63
Bureau of Information—Some of the Neighbors Say—Why the Young Turkeys Die—Publishers Department. 64

WATER IN SUMMER.

If water must be provided, give it in the morning, fresh, and be careful to clean out the fountains or troughs in order to guard against disease. The roup and cholera are always spread through the flock by each member being compelled to drink from the same source as the sick fowls.

EGG-EATING HENS.

It is a very difficult matter to break an egg-eating hen of the vice. Never allow a broken egg to be within reach of the hens, or throw egg-shells to them, as such will teach them the habit. Make the nests in a dark place, rather high off the floor and open in front, so that the hens will have no place to stand for eating the eggs.

DOUBLE POULTRY HOUSE.

This is styled a "double" poultry-house because it is divided, and has windows on two sides, and is from Mr. E. F. Hodgson, Dover, Del. It is well lighted, warm and convenient. It is 18x25 feet, five feet to the eaves, and eleven feet to the gable, sided with matched lumber, and has only one door, but has six windows—two at each end and one on each side. It may be lined inside, if preferred, with boards or paper.

The ground plan (Fig. 2) shows the arrangement. The passage way is at A. For an explanation of the several parts, B B B are the poultry rooms, D D D the roosting platforms, C C C the feed bins, F the door, and E E, etc., the windows.

The passageway, A, may be a board floor, and the poultry rooms be floored with earth. The small room to the right may be used for setting hens, or any other purpose. The division between the passageway and rooms should be of open lattice or wire, to admit the light from the front. The division between the poultry rooms should be boarded two feet above the roost, and then latticework or wire used. The feed-bins are simply to hold the food, the birds being fed in troughs, or otherwise, in the poultry rooms. This house is somewhat large, has many windows and will cost about $100.

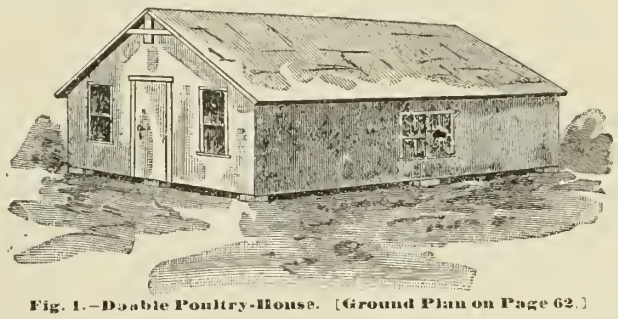


Fig. 1.—Double Poultry-House. [Ground Plan on Page 62.]

THE SILO—WINTER GREEN FOOD.

This is the season for storing away green food for winter, and in response to many requests of readers we give the following on the subject, in the shape of a few rules that may be pasted up for reference.

1. A silo is a pit, box, barrel, hogshead, or any receptacle for green food, and is used principally by dairymen, for preserving cornstalks (blades, also) that have been cut up fine for that purpose.

2. Not only corn, but clover, any of the grasses, cabbage, or green food of any kind, may be stored in the silo.

3. A silo must be *air tight* and *strong*, as great pressure must be resorted to in order to press the cut food. The materials in the silo should be pressed as closely together as chewing tobacco in a box.

4. The materials should be as near the maturing stage as possible, but not fully matured. For instance, corn is cut when the ears begin to glaze, and clover is cut when just blossoming. This is done to arrest the nutritive matter in the stalks and leaves while the sap is on its way up to fill out the seeds.

5. If cut too green and young, the materials will consist mostly of water, and contain but little nutrition.

6. Mow your grass, cut it very fine (half inch length for fowls) and pack it closely in your silo, which may be a barrel or hogshead.

7. Suppose you use a hogshead. Take the head out, and nail strips across the head to hold it together. Trim the edges, so as to allow the head to sink into the hogshead. Put the green material in the hogshead, ram it down, put the head down on the green food, and then put heavy stones on the head, so as to get all the pressure you can. This pressure excludes the air from the material, and preserves it.

8. You can add green material from time to time until the hogshead is full, but always keep it pressed.

9. Bear in mind that you must have *great pressure*. A few little stones will not answer. When ready for use in the winter the materials should be so closely packed as to require a knife to cut off portions.

10. Your hogshead or barrel must be air-tight except at the top, as the moveable head must go in, and the head must go down to the materials. If the hogshead is only half full, the head will, of course, be half way down the hogshead. Then pile stones on it. The hogshead must be *strong* or it will burst. A whisky barrel, well cooped, is excellent. A *strong* square box may be made, if preferred. Paper may be used on the sides to exclude the air.

FOOD AND BROODER FOR CHICKS.

A lady subscriber writes us in regard to her chicks. She had a large number but they have gradually died off. We give her letter in order to show how carefully she fed her chicks, and yet could not discover the cause. She says:

"I have 163 chicks, hatched in an incubator They all seemed lively at first, but have been dropping off one by one until fifteen have died. Some will seem all right when fed in the morning, and the next time I visit the brooder find another down. I have fed them on a variety, such as bread, eggs, meat and grass, and given wheat, sifted oats, shells, coal ashes, and fresh water, and also milk. They sleep in a small brooder, not much crowded, floor covered with sand and straw, the brooder being heated with a lamp, with four pipes in each one, so that the heat is not all furnished from the bottom. I have thought it was leg weakness in some of them."

We wish to say that the lady gave no post-office (which is very annoying), hence we could not write her and ask her what kind of a brooder she used, which was just the thing we preferred to know, but suppose it is a *bottom* heat brooder. If so, she will have leg weakness in her chicks.

Next, she has 163 chicks, and, as we understood her, only one *small* brooder, but the chicks, in her opinion, are not *crowded*.

Again, she believes she is having a heavy loss, yet fifteen chicks in 163 is less than a loss of one chick in ten, with sixteen hens. She is not losing as many as if her chicks were with hens. We regret that she did what many often do, and that is to omit her post-office, as we desired to understand her correctly.

FAILURES IN HATCHING THE EGGS.

It is often the case that when a hen has faithfully been on her nest for three weeks, and done all that is possible to enable the eggs to produce chicks, that her efforts are fruitless, the eggs being worthless and infertile. Now, what many would wish to know is why the eggs did not hatch, especially as the hen did all she was competent to do. There are a number of causes that may be mentioned as likely to be in the way, but at this season, when the weather is cold, the difficulty is often due to the males being frosted on the combs. It may appear as an insignificant matter to have the tips of the combs frozen, but to the bird it is very painful, as the tips frequently "rot" off. This debilitates the male, and he will keep away from the hens until the injured member is healed and he recovers his strength. If the hens are frosted, they will cease to lay until the combs are healed. Sometimes the cause of infertility may be that the male is not in full condition, or the hens may be very fat. When hens lay soft-shell eggs the chances are that the eggs with hard shells will not hatch, as the occasional soft-shell eggs denote that the flock is out of condition. Do not put too many hens with the male, and do not rely on two males with a large flock, as they will quarrel and interfere with each other at every opportunity.

BONES AS FOOD.

The Feathered World, London, has the following to say of bones as food for fowls, and compares bone meal with fresh bones:

"There is no doubt about the value of bone meal for promoting the growth of chickens; but for old fowls, to increase the egg supply, I recommend that fresh bones crushed or ground up be given occasionally. The fresher they are the better, because there is always a certain amount of fatty animal matter about them which is highly nutritious, and this is not to be found in the ordinary bone meal. The bone food should only be given occasionally, not more than twice a week at the outside, and in pieces not larger than a pea. I have known cases of farmers who have never had so many eggs as just after the annual grind of bones for dressing their land."

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

PRESERVING EGGS.

The Different Processes—The Sulphur Method of Keeping Meat and Bones—The Whole List of Receipts.

We give below a collection of processes which we published previously, but repeat at the request of many of our new subscribers. We will say this much in the beginning, however, which is that eggs so packed in a box as to permit them to be turned over daily will keep twice as long as those not so treated. By packing them in a box with oats as a filling, and then turning the box upside down, a large number can be turned at once. Another point is that eggs from hens that are confined in yards without the companionship of cocks keep better than under the reverse conditions, or rather, infertile eggs keep better than those that are fertile. Supposing the reader intends to try one dozen eggs as an experiment, one of which is to be broken each month for a year (of course a large number may be used if preferred) we will give

THE SULPHUR PROCESS.

Take a common starch box with a sliding lid. Put the eggs in the box, and upon an oyster shell or other suitable substance, place a teaspoonful of sulphur. Set fire to the sulphur, and when the fumes begin to rise briskly shut up the lid, make the box tight, and do not disturb it for half an hour. Now take out the eggs, pack in oats, and the job is done. If the oats or packing material be subjected to the same process it will be all the better. If a barrel full is to be preserved, place the eggs in a tight barrel two-thirds full, with no packing whatever. Fire a pound of sulphur upon a suitable substance, on top of the eggs in the vacant space over them, shut up tightly, let stand an hour, and then take out the eggs. As the gas is much heavier than the air it will sink to the bottom, or, rather, fill up the barrel with the fumes. In another barrel or box place some oats, and treat in the same way. Now pack the eggs in the oats, head up the barrel, and turn the barrel every day to prevent falling of the yolks, using each end alternately, and they will keep a year; or, according to the efficiency of the operation, a shorter, or even a longer time.

It will be seen by the above that the process is a dry and neat one, and very inexpensive, sulphur being a very cheap article. The process was sold several years ago by certain parties in Cincinnati as "Ozone," but it is an old one, and the parties were exposed, not that the process was a fraud, but because they sold a pound of sulphur for $2 as ozone. To show the wonderful preserving qualities of sulphur our readers may by a quicker process by way of experiment, thus:

Take a piece of fresh beef, a fish, or anything that will quickly decay. Place it at one end of a close box and burn a little sulphur at the other end. The beef or fish will absorb the sulphur fumes. Keep the box closed half an hour, then take out the beef or fish, hang it up somewhere (cellar, out of doors or anywhere) and our word for it that you can let it hang up a year without the slightest odor or signs of decay. The first three days there will be a slight odor of sulphur, which passes away. The meat may dry up gradually, but will not spoil. If placed in a pot the boiling water at once disengages the sulphur, and it passes off. It is perfectly harmless. In fact it is best to treat all the meats used in the family in that manner, even when wanted for immediate use, as the meat, even if from diseased animal, will be purified from disease germs. Remember this when the cholera comes, and also ask yourself if you have not received $100 instruction from a single number of our little daisy of a POULTRY KEEPER.

Do not forget that it will only cost you a few cents to try the process above. Do not take our word, "prove all things." Cider may be kept sweet for years by burning sulphur on a floating piece of wood on the top of it, and dried fruit may be made white, and will keep better from its use. A corpse may be kept a year by the dry process, and the clothes of small-pox, yellow-fever, or cholera patients may be worn with impunity after being submitted to the process. All forms of fermentation, germs of disease, bacteria, or invisible organisms yield to its power, and if the water which has been used to absorb sulphur gas be used as a gargle, or drink, it will be found a splendid specific for diphtheria, or other contagious diseases, besides being excellent in case of roup and cholera in fowls. Its wonderful powers of preservation entitle it to be named the destroyer of diseases, for decay and putrefaction are the same as diseases. Should you have any difficulty burning sulphur melt it in a small pot or crucible, and then draw a lampwick through it. When wanted for use cut off a piece of the wick. The reason why sulphur does not burn freely at times is because it melts and smothers the flames. Here is another process, the invention of J. M. Bain. We have not tried it but it is well-known as

THE HAVANA (?) PROCESS.

Take twenty-four gallons of water, put in it twelve pounds of unslacked lime and four pounds of salt. Stir it well several times a day, and then let it stand and settle until perfectly clear. Then draw off twenty gallons of the clear lime and salt-water. By putting a spigot in the barrel about four inches from the bottom you can draw off the clear water and leave the settlings. Then take five ounces baking soda, five ounces cream of tartar, five ounces salt peter, five ounces borax and one ounce alum; pulverize these, mix and dissolve in a gallon of boiling water, which should be poured into your twenty gallons of lime water. This will fill a whiskey barrel about half full, and a barrel holds about about 150 dozen eggs. Let the water stand one inch above the eggs. Cover with an old cloth, and put a bucket of the settlings over it. Do not let the cloth hang over the barrel. After being in the liquid thirty days the eggs may be taken out and packed in boxes and shipped. Do not use the same pickle but once. You need not wait to get a barrel full but put in the eggs at any time. As the water evaporates add more, as the eggs must always be covered with the liquid. It does not hurt the eggs to remain in the pickle. It is claimed that this process will keep them a year.

The next is one that we believe to be excellent, and as a credit to the source from which we obtained it we term it

THE SCIENTIFIC AMERICAN PROCESS.

Having filled a clean keg or barrel with fresh eggs, cover the eggs with cold salicylic water. The eggs must be kept down by a few small boards floating on the water, and the whole covered with cloth to keep out dust. If set in a cool place the eggs so packed will keep fresh for months, but they must be used as soon as taken out of the brine To make the salicylic solution dissolve salicylic acid (which cost about three dollars a pound) in boiling water, one teaspoonful of acid to the gallon. It is not necessary to boil all the water as the acid will dissolve in a less quantity, and the rest may be added to the solution cold The solution of brine should at no time come in contact with any metal. In a clean airy cellar one brine is sufficient for three months or more, otherwise it should be renewed oftener. For that purpose the kegs, etc., should have a wooden spigot to draw off liquid and replenish the vessel. Butter kneaded in the same solution and packed tight in clean stone jars will keep fresh the whole winter, but must be covered with muslin saturated in the water, renewing it sometimes. Cover the jars with blotting paper saturated with glycerine. Salicylic acid is harmless and yet one of the best and certainly most pleasant disinfectants in existence with no color nor taste. The water is an excellent tooth wash and the best gargle to prevent diphtheritic contagion.

The different processes below are taken from the journals mentioned in the titles:

THE BOSTON GLOBE PROCESS.

An Illinois correspondent writes: "Last summer I was induced to try packing down eggs for winter use. I had in seasons previous limed them, but a limed egg is not altogether to my taste. Last summer I took sweet, clean kegs, set them in a cool, dry place, with a barrel of powdered dried earth near at hand, In the kegs I placed a layer of this earth, then a layer of eggs, small end down, then a layer of earth, and so on until the kegs are filled. These kegs were quite good six months after packing down. By placing the eggs small end down the yolk is prevented from dropping down on the end and settling on the shell, while the dry, fine earth keeps them from the air. I suppose that ashes or bran or any other fine, dry substance is as good as the baked earth, but I write only of what I have actually experimented with."

THE FARMERS' LEDGER EXPERIMENTS.

There is an insensible gradation from a perfectly fresh egg to a poor one. No, amount of skill will enable the buyer to distinguish between an egg three days and one three weeks old. The newly laid egg however is the one he can most successfully preserve. Success depends upon gathering the eggs every day and subjecting them to the treatment desired. During the month of June, preparations were made to test the relative advantages of various methods already known. Accordingly, the eggs were gathered each day, and on every egg was marked in lead pencil the date laid. The following different ways were tested: 1. Hine's Preserving Compound. This is probably largely lime and salicylic acid. It is liquid, in which the eggs are dropped and allowed to remain until ready for use. 2. Various preparations of salt and water. 3. Packing the eggs in gypsum, oats, salt and pulverized charcoal. 4. Dipping in paraffine, beeswax and boiling Rex Magnus. 5. Dipping in boiling water for five seconds. 6. Nothing.

A few observations are here given. An egg laid June 18th and placed in Hine's Compound was examined July 17th and found perfectly sweet. An egg laid June 18th and placed in a salt solution of thirty-three per cent. salt was examined July 17th, and the yolk was found very hard and the white in no way damaged. An egg laid June 18th and treated with beeswax was examined July 17th and found perfectly fresh and sweet. There was no beeswax smell imparted to the contents. July 17th examined an egg laid June 19th; it was taken from a solution of salt and water, containing eight per cent. salt. The yolk was hard, the egg had an offensive smell, the white was watery. Sugar and salt dissolved in water mould badly and are of no use in an average cellar. September 3d examined an egg laid June 28th and treated with Rex Magnus, and found it perfectly preserved. An egg laid June 15th, and treated with paraffine was at this time, September 8th, rotten. An egg laid June 26th and paraffined six days afterwards was good. September 29th examined an egg laid June 13th; July 16th it was placed in a refrigerator, where the temperature has since been about fifty-five degrees to sixty degrees Fahrenheit. It had not been treated in any way, and at the time broken was pronounced by the lady in charge of the College Farm house to be a fresh egg. At the same time examined one laid June 17th. It had been treated with beeswax. It was perfectly preserved, but the yolk adhered to the shell. This, of course, could have been easily prevented. From these observations it will be seen that the merits of Rex Magnus, Hine's Compound, or any other food preservatives, are not so numerous as advertisements at first make them appear to be. Before investing money in food preservatives, it would be well to investigate the properties of *cold air*.

THE POULTRY YARD PROCESS.

To keep eggs the "year round," take one pint of salt and one quart of fresh lime, and slake with hot water. When slaked, add sufficient water to make four gallons. When well settled, pour off the liquid gently into a stone jar. Then with a dish place the eggs in, tipping the dish after it fills with the liquid, so they will roll out without cracking the shell, for if the shell is cracked the egg will spoil. Put the eggs in whenever you have them fresh. Keep them covered in a cool place and they will keep fresh for one year.

THE PRAIRIE FARMER PROCESS.

The keeping of eggs being almost wholly a question of temperature and the exclusion of air from them, it follows that that which will do both in the cheapest and most effectual way will be best. Hence eggs are kept in very great numbers by cold storage—that is, by providing a steady, low temperature not above thirty-five degrees Fahrenheit. But this is expensive. When, however, the temperature can be kept down to seventy-five degrees, and below, if eggs are packed in some dry, clean substances which will exclude the atmospheric air, they may be kept in a comparatively fresh state for months. This may be done in the following way: Provide clean, dry packages, not exceeding in capacity the quarter or third of a barrel, and a sufficiency of common, finely ground land plaster, such as is used for agricultural purposes. Commence by putting a layer of the plaster two inches deep on the bottom of the package, and into this set the eggs *small end down*, so each egg will be separate from every other. When the strata of eggs is complete add more plaster, then a second strata of eggs, till the package is full. If the work is done carefully, all the eggs are sound when packed, and each egg is separate from each other, and the temperature not allowed to get above seventy-five degrees, the result in every case will be satisfactory.

THE FRENCH FARMER PROCESS.

The plan of a French chemist for preserving eggs, is as follows: While quite fresh they are gently struck against each other to see if they be "sound"; next they are placed in a kind of earthen pitcher having a very narrow bottom. When the vessel is full, a solution of a quarter of an ounce of quick lime to one quart of water is poured in. The lime water permeates the shell till it reaches the first membrane, rendering the latter impervious. The pitchers are then placed in a cellar, from which all light is excluded, but a uniform temperature of forty-four to forty-six degrees Fahrenheit is maintained. In the course of a few days a pellicle forms on the surface of the water in each pitcher (carbonate of lime) and that must never be broken till the moment for withdrawing the eggs. This process enables the eggs to be kept fresh for six or eight months, and not more than five in a thousand prove objectionable.

THE BIRMINGHAM PROCESS.

At the Birmingham, England, show, there was a competition for the best dozen of preserved eggs. The eggs had to be sent in to the custody of the secretary prior to October 1st, so that at the time of examination by the judges they had to be at least two months old, and it was objected by many that the time was too short and ought to have covered six months. The plan of testing adopted by the judges was as follows: To break one of each set into a clean saucer, then to bring the best eight together in the same sauce-pan, putting them into the cold water and removing from the fire as soon as boiled, and allowing them to remain one minute and a half before tasting. Another set, one from each selected dozen, were boiled ten minutes, and opened when cold. Those preserved in lime water were not satisfactory, milk of lime being more highly recommended. Others that had been coated with melted drippings or beeswax, were also found wanting, the whites being thin and watery. The best had been simply packed in common salt. These had not lost sensibly by evaporation, had good consistent albumen, and tasted best when boiled. The eggs that took the second prize were adjudged nearly as good as the first. The young lady who packed them gave the following as her method:

Melt one part of white wax to two parts of spermaceti, boil and mix thoroughly; or two parts clarified suet to one of wax and two of spermaceti. Take new laid eggs, rub with antiseptic salt or fine rice starch. Wrap each egg in fine tissue paper, putting the broad end downwards; screw the paper tightly at the top, leaving an inch to hold it by. Dip each egg rapidly into the fat heated to one hundred degrees. Withdraw and leave to cool. Pack, broad end downwards, in dry white sand or sawdust.

It was generally believed that had the contest covered a longer period these would have stood first. Another point of superiority in this last method was the fine appearance of the eggs, the shells being pure and clean as when first laid. For home use probably the common salt method, owing to its simplicity, will be generally preferred, but for market, doubtless the extra pains required by the second method would pay. Next to good winter laying hens for profit, comes a good method of preserving eggs, and we should like to see a contest of this kind at our own poultry shows another season.

MRS. MOORE'S PROCESS.

Mrs. N. H. Moore, La Bette, Kansas, at our special request, sends us her method of preserving eggs, which she kindly does for the benefit of our readers, and to which we call particular attention. She says:

I received your card requesting me to send the readers of the POULTRY KEEPER the method I used in preserving eggs. Should have answered long ago, but was ill when received it. The way I put up eggs is this. I take a new box that will hold twenty dozen and put a thick layer of coarse salt on bottom of box; then every day as I gather in eggs fresh from the nests, I take clean, sweet lard and grease each egg *carefully* all over, then set them in the salt, small end of egg down, until you have a layer of eggs, set on end, and then you take salt and put over your layer of eggs, being careful to fill in between each egg, and fill up every crevice with the salt. Put salt between each layer of eggs thick enough to set the ends of your next layer of eggs in solid, so there will be no danger of the eggs shaking out of their places when you are turning the box. Keep on in this manner, alternate layers of greased eggs and salt, till your box is full, taking care to put a thick layer of salt on top, next to cover of box; then nail on your box cover tight, mark on the lid the number of dozens, date of finishing and packing, so as to be sure. And tell your readers, Mr. Editor, to *be sure* their *eggs* are *fresh*, and never put in an egg a week old, or a stale and doubtful looking egg. I would leave my number incomplete before I would put in a doubtful egg. I think people are *careless* about the *freshness* of their eggs is the reason so many *fail* in preserving eggs. I find the *best* way is to gather, grease and pack each day's laying of eggs. I put up eighteen dozen in the above way, on the 19th of April, 1886, (finished my box on the 19th), and unpacked the 12th of January, 1887, and sold the eggs at a restaurant at twenty cents a dozen. That was my experimental box. In the eighteen dozen there were four spoiled eggs. People that came in while I was unpacking the eggs, could not tell which were the preserved and which the fresh eggs, as I broke a preserved and a fresh egg in different cups, and one old gentleman actually picked on the preserved as a fresh egg. I fried and boiled the preserved eggs, and I *know* no one could find fault with the flavor. The lard prevents the salt from hardening or cooking the egg. I turned my box only twice a week. I washed the preserved eggs in warm soapsuds and wiped them dry with an old, soft towel. This has to be done very carefully. The eggs, after washing and wiping dry, can be packed to ship or marketed at home. Pack in any way most convenient, in bran, oats, etc. Of course, the preserving will not keep them from freezing before they are unpacked, or after. Through the summer they must be kept in a cool, dry place, turning twice a week. In winter keep in a warm, dry place, but not too warm, turning twice a week. The above is just as I did with my eggs, and I had perfect success. To sum up, the eggs must be fresh, the lard sweet, the salt dry; then go ahead.

MISCELLANEOUS PROCESSES.

Below are a few processes that were collected from sources to which no credit properly belongs, or which are unknown:

PRESERVING EGGS IN BOTTLES.—A woman living on a ranch in the Washoe Valley, Nev., reports a novel method of preserving eggs for winter use. During the summer she breaks the eggs, pours the contents into bottles which are tightly corked and sealed, when they are placed in

the cellar, neck down. She claims the contents of the bottles come out as fresh as when put in.

PRESERVING EGGS WITH LIME.—The best time to preserve eggs may be stated to be when they are perfectly fresh. No amount of preserving can restore a stale egg, and if it is preserved at all, the best that can be done is to keep it as it is and from getting worse. The main point is to put them in the preserving liquor or preparation as quickly as possible, and to keep out all bad ones, which would certainly infect the sound eggs. The usual preparation is lime water, made by slacking lime in the usual manner, and then adding water until it is like common whitewash used for buildings. This is left to settle and the clear liquid is drawn off into some convenient vessel. The eggs are carefully slipped into this liquor from a tin dipper, and when the vessel is nearly filled a cloth is laid over the eggs, and this is covered with two inches of the thick lime, and then water is poured over it and kept fully one inch deep.

AUSTRALIAN METHOD.—Mr. W. Battye, of Selkirk, Man., Can., writes us that in Australia eggs are preserved in the following manner: The vessels in which the eggs are to be placed are glass jars with patent stoppers, vulcanized India-rubber joints making them perfectly air-tight. As soon as the eggs have been collected, the jars are stood in hot water for some time, and left until the air in them has become thoroughly warm and rarefied. The jars have been heated, the eggs are wrapped up in paper to prevent them knocking together, and placed in warm receptacles, their pointed ends being uppermost. The jars are immediately closed up, and then, and not until then, are removed from the hot water. It is said that if this process is skillfully carried out, the eggs will be as fit for the breakfast table as the day they were laid, many months after they were put in the jars. The great secret of success in carrying out this method is, no doubt, to thoroughly heat the air in the jars. The eggs will stand a better chance of keeping if the paper in which they are packed is previously baked and used warm. Patent stoppered jars are not absolutely necessary, any stopper answering which effectually excludes the air.

THE WAX PAPER PROCESS.—Says Mr. C. G. Jordon, in *Colorado Farmer*: "I am experimenting this summer. I am wrapping eggs in wax paper, such as is used for wrapping butter, popcorn, etc. It excludes the air, is cheap, and I think it will keep eggs all right until they are worth five to ten cents more per dozen. I opened some which have been packed forty-five days, and they were in prime condition. So far, so good. I wrap them the day after they are laid. If not perfectly clean, wash them before wrapping."

THE BEESWAX PROCESS.—A French authority gives the following method. Melt four ounces of clear beeswax in a porcelain dish, over a gentle fire, and stir in eight ounces of olive oil. Let the resulting solution of wax in oil cool somewhat, then dip the eggs, one by one, into it, so as to coat every part of the shell. A momentary dip is sufficient, all excesses of the mixture being wiped off with cotton cloth. The oil is absorbed in the shell, the wax hermetically closing all the pores. It is claimed that eggs thus treated, and packed away in powdered charcoal in a cool place, have been found as fresh and palatable as when newly laid. Paraffine, which melts to a thin liquid at a temperature below the boiling of water, and has the advantage of being odorless, tasteless, harmless and cheap, can be advantageously substituted for the wax and oil, and used in a similar manner. Thus coated and put into lime pickle, it is said that the eggs may be safely stored for many months; in charcoal, under favorable circumstances, for a year or more. They should be kept in a cool place.

PRESERVING WITH GELATINE.—Dissolve one pound gelatine with one gallon of milk at a temperature of 130 to 140 degrees. It is then sliced and dried. These slices will jelly other gallons of milk. Meats, fruits and eggs are said to keep in it.

PRESERVING WITH SALICYLIC ACID.—Coat the eggs with butter containing a few grains of salicylic acid; place in sawdust, the eggs not touching each other.

PRESERVING WITH BORACIC ACID.—A mixture of boracic acid and borax, dissolved in water (proportions not given), is said to be excellent.

PRESERVING WITH WATER GLASS.—Coat the eggs with liquid silicate of soda (water glass) and pack in bran.

SUMMARY.

Now let us take a view of all of the processes given and condense the whole into a nutshell, and also to avoid mistakes:

THE POULTRY KEEPER'S ADVICE.

1. Only *strictly fresh* eggs can be preserved, and in packing them the eggs should not touch each other, as one bad egg will spoil the whole.

2. Eggs collected from neighbors, or at stores, will not answer, as even the most obliging neighbor may unintentionally impose a stale egg on you.

3. Eggs from hens not in company with cocks will keep three times as long as will those from hens mated with cocks. Hence, in summer, after hatching is over, remove the males, as the hens will lay fully as well without them.

4. Keep the eggs as near sixty degrees as possible, but seventy is not too high. In other words, keep them in a *cool* place in summer, and do not let them freeze in winter. The cooler you keep them the better.

5. Be sure and *turn* the eggs at least twice a week, or the yolks will adhere to the shell, no matter how they may be preserved. This may be done by putting the eggs in a box, and turning the box, or by placing the eggs on a rack, or turning tray.

6. Eggs will keep in a *cool place*, if simply turned often, without any packing at all, especially if they are from hens not in company with cocks.

7. Dry, finely-sifted coal ashes, dry salt, fine, clean dry dirt, corn, oats, chaff, charcoal, or bran, will answer, but ashes or salt are preferred.

8. Twenty grains salicylic acid in one gill of cottonseed oil (or lard) may be used for greasing the eggs slightly, in order to prevent evaporation, before packing

9. The liquid processes are not as convenient as the dry processes. Do not trust any of the so-called "Havana," "New York," or other *Bain* methods.

10. Never go into the *business* of preserving eggs until you have experimented with a dozen, breaking an egg every month, in order to make observation.

11. It will be very difficult to preserve eggs and have them *fresh* at the end of six months, but as three months is long enough, eggs from unmated hens will easily keep that length of time. The prices advance in three months from the time prices are low.

12. Assort your eggs when taken out for sale, putting dark ones together and light ones together. Wash them clean before preserving, in warm water, and do the same when taking them out.

13. Although we have given several methods, simply to lay them before our readers, we recommend only the method of placing eggs on racks, turning them twice or three times a week, and keeping them in a cool place. We term this the rack method.

14. Eggs that are fertile will not keep well under any process, but may be kept six weeks, for hatching, by the rack method.

15. Limed eggs, or eggs packed in salt, etc., will not bring more than one-half the price of fresh eggs in market. In other words, you will get no more for them after preserving than when they are fresh and cheap, hence such eggs do not pay.

16. No one can *buy* eggs and preserve them with profit. You must keep your own hens and have no males with them.

17. The sulphur process will enable you to preserve and keep ground bone, ground meat, fresh fish, or almost anything, for six months or a year, and not the slightest odor will result. It also destroys all germs of disease, or impurities, in the meat or bone, and flies or insects will not attack the materials after preserved.

18. We do not recommend the sulphur process for eggs, as it discolors them some, though it is efficacious. The rack method, in a cool place, is our choice.

19. If you can keep eggs for three months only, it will be sufficient for a change of prices.

20. Do not try any of these methods on a large scale until you experiment with a dozen eggs. It will cost you but little to test for yourself and learn.

We have given the above in former issues, but present the processes again in response to requests from our readers. We believe that all the methods known are here given "in a lump," and we have not relied upon our own knowledge but collected from all sources. You cannot procure any book, from any source, that contains so much on the subject as this one issue, so take our advice and file it away for reference. We aim to make each number of the POULTRY KEEPER worth a whole year's subscription,

MAKING NON-SITTERS.

Although the editor of the POULTRY KEEPER, with the view of imparting information, promulgated the "Fat Sitting Hen Theory," he was fiercely attacked, but as he had first demonstrated that the "theory" was really a fact, he was in a position to hold his ground, and to-day it is only occasionally that one will come forward to offer facts on the other side. Mr. Phillips, of Amo, Indiana, has, however, taken an opposite position, as will be noticed by his letter in this issue. The experiments of others endorse the POULTRY KEEPER. The Wisconsin *Farmer* remarks:

"The theory, advanced some years ago by P. H. Jacobs, that a hen becomes broody after she has assumed a certain amount of fat, seems to have some weight to it. Mr. Jacobs at the time declared that even a flock of Leghorns could be made broody if they were fed fattening food during the laying season. At the time this theory was advanced, it was treated in a ludicrous light, and the originator was the butt of many heartless jokes, but recent experiments bear out Mr. Jacob's theory. Michael K. Boyer, of Hammonton, N. J., who is constantly experimenting with poultry, has given the fat hen theory a good test, with the result of turning that non-sitting breed, the Black Minorcas, into regular setting hens. He finds them good setters and good mothers. Mr. Boyer fed the fowls as follows: In the morning they received equal parts of bran, ground oats and corn meal, made into a mash, with condition powder added once a week. Green food was supplied them once a week, and whole wheat and oats given at night. There was always more feed allowed than they could eat up clean. Care was taken that they would not get too fat, for fear of sickness, and yet they were taken as far as it was safe. After a steady laying, the Minorcas, one by one, showed a broody inclination, and in a short time became so broody that they could be handled at will. At the time Mr. Jacobs gave out his opinion on the subject, it was said by some writers that any hen of the non-sitting varieties which became broody proved that she had foreign blood in her, that she was a crossbred or descended from a crossbred. In order to overcome that, Mr. Boyer in his experiment used strictly thoroughbred Minorcas, secured from Francis A. Mortimer, of Pottsville, Pa., one of the original importors of the breed into this country. A similar experiment made with White Leghorns had the same effect."

Next comes Mr. "Miller Purvis," of Cardington, Ohio, who is not only one of the best authorities on all subjects pertaining to poultry, but he is also one who has performed many experiments. He has charge of about 2,000 fowls, and has many opportunities for arriving at *facts*. Mr. Purvis writes:

Every year I learn that I really do not know as much as I thought I did, and, if I survive a few years longer, I may come to the point of acknowledging that there are people in the world who really know almost as much as I do. The latest thing that I have discovered that I did not know was that Bro. Jacobs has been about right about the feed having a good deal to do with making sitters out of hens.

Now I believe the Brown Leghorn is far and away the best breed of fowls on earth, and have thought so for twelve years, so I am pretty well grounded in my faith in them. For me they lay winter and summer, and are a source of perennial delight and profit. I never fancied the Asiatica at all, and my experience with Cochins a few years ago made me think that they had a habit of laying about thirteen eggs and then hatching them, and after that resting until the roses bloomed again. This naturally prejudiced me against the whole family, and when I read about "non-sitting" Light Brahmas, my Grecian nose took a turn upwards, and I laughed the idea to scorn. But I kept on reading the POULTRY KEEPER, and Bro. Jacobs kept on insisting that feed had about everything to do with making a hen sit, until I got tired of it, and concluded to take the matter into my own hands, and conduct an experiment that would floor him completely.

Luck was on my side, for a friend who had become stricken with a bad attack of Buff Leghorns came to me and implored me to take three Light Brahmas off his hands. The trio consisted of a cock, hen and pullet. On account of his love and affection for me I might have the trio for five dollars, he said, and really they looked nice, and I clinched the bargain then and there. Then my neighbors began to make remarks. I had talked Brown Leghorns so long that all of them had become converts, and had that breed, and when they saw those three fowls that weighed over ten pounds each, average, in my yard, they asked vain and foolish questions, saying: "Where d'ye get those ostriches?" and "do you halter 'em up nights?" and "do you feed 'em corn in the ear?" and reviled me greatly. But I kept on my way, upheld by the noble purpose of bringing Bro. Jacobs to shame, and causing him to put on sackcloth and sift coal ashes in his hair on account of his undoing.

The pullet was sitting when I got her, and an eighteen-mile ride did not seem to discourage her at all, for she kept right on sitting for a week, and I let her sit until she got hungry enough to go out and scratch for something with which to satisfy her appetite. After I had them about two weeks, they began to lay, but through the winter they did not do very well, as I did not have a very warm place for them, not wanting to put them with the Leghorns, for fear they would starve to death on the rations I gave the smaller fowls. I gave them corn wheat screenings, ground meat, buttermilk and let them run on the barn floor, where nice clover hay was thrown down each day, to feed the other stock. Every one of my neighbors predicted that those hens would go to sitting as soon as the first warm day came, and I believed they would. This spring I shut them up in a room six by ten feet, and began to cut off their grain ration and feed them grass daily. At first I cut sods and threw into them, and as soon as the grass got long enough I fed them an egg basket, of the size one sitting is packed in, full of lawn mower clippings, each day, and at evening, after the Leghorns had gone to roost, I turned them out and left the door open, so they could get out at daybreak, and have a run before the others were turned out for the day. Milk has been given them freely all the time. This is written May 26th, and those contrary hens have been laying about ten eggs a week ever since the very 1st of March and they show no more sign of sitting now than they did then, and their combs are as bright as a red, red rose. I don't believe they are going to sit at all. I give right in, and if it wasn't raining as hard as it could pour down I should go out and paw up a little dust for my own half inch long hair. I would try feeding some of my Leghorns to make them sit, but I am afraid they would do so, and I don't want them to.

"Now observe a thing or two. Those Brahmas get just a handful apiece of cracked corn in the morning, and the same amount of wheat screenings in the evening, and they must fill up on milk and freshly cut grass for the remainder of their food. They have not had any meat since the weather got warm, but they have had oyster shells and other grit.

"Although they are so closely confined, they lay just as well as my Leghorns, and every one of the eggs are fertile. How long this will last I have no means of knowing, but it seems to me that the experiment has not been as successful as it might have been.

"I thought I was going to show that Brahmas sit because 'tis their nature to, but I have failed, and I do not believe they will sit, as fed at present, until along in the summer. This little experiment has knocked the props from under more than one beautiful theory that I have been cherishing for some time.

"I could tell you something about Leghorns sitting last year, but the time is not ripe yet."

We will state that right in our own yards the theory has been tested and established. By regulating the food we can make non-sitters of Brahmas, Cochins, Langshans, Plymouth Rocks, or any other breed, and we can make a Leghorn, or any other non-sitter stick as closely to her nest as may be desired. We have a Leghorn pullet, not yet one year old, that is persistently trying to sit. This does not confirm the view, taken by Mr. F. A. Mortimer, that old hens were more liable to sit than pullets, but we admit that a hen will fatten more readily than will a pullet

Two years' experiment made in Hammonton, with Brahmas on one side of the fence and Leghorns on the other side, showed a very satisfactory result. The Brahmas did not sit and the Leghorns were all broody. The next year the Brahmas were made broody and the Leghorns did not offer to sit at all. It was all done by the manner of feeding, and it can be given in a few words, which are, that when a hen is made fat she becomes broody. If some hens were not fat when they began to sit they would perish on the nest. Nature prompts them to begin to sit only when they are in a proper condition to endure the ordeal.—*Associate Editor.*

BROODING SMALL CHICKS.

Brooding and caring for small chickens is a part of the work not to be overlooked by the operator. You must remember that young chickens are as tender as little babies and must not get chilled, for once they are chilled, the bowels become loose and they shortly die. This bowel trouble is often ascribed to the food, but when the real cause is known, it comes from being in a brooder with the temperature too low.

The temperature of the brooder should be ninety degrees, and for quite young chicks, should be ninety-five degrees.

Remember that the hen broods with the same temperature that she hatches with. If the brooder is rather warm, the little chicks will spread out near the outer edge and even put their heads out; but if too cool, they will collect in the centre of the brooder and pile up and become wet from the steam coming off the under chicks. As this always occurs at night, the operator is often sadly disappointed the next morning to see what was a fine brood of chicks looking like as many drowned rats, and, like enough, half of them dead. In a fit of despondency he or she will give up the business, or at least this part of it.

Now then, try a brood of chickens on this plan. Keep them in a brooder at ninety-five degrees for the first week; the second week at ninety degrees. Don't let the temperature get below these points. During the time mentioned the temperature should never go below eighty-five degrees. For winter chicks, there is more in the temperature of the brooder than in the seed. Nine-tenths of the mortality is caused by the chicks getting chilled in the brooder.—*G. A. McFetridge.*

A GUSHING CIRCULAR.

(FROM THE BARNYARD BLIZZARD.)

We—that is, Co. C.—doing business at the old stand, wish to announce and proclaim to the world, and the Fee Jee islands, or to whom it may concern, that we have procured, at a great cost and expense, the following celebrated, rare and attractive domestic fowls. No other kinds in existance can show so clear and continuous a record. We will give a short sketch and prices of each. Also, where they can be found and seen with the naked eye, the coming season.

The editor may chip in a few brackets, exclamation points, stars, Oh's, Ah's, that's so's, and a few other things that will give a telling effect. "Barkis is willin'," and the head manager don't care.

Red Jacket, the wild prairie male cockerel, is the only wild species of untamed fowl found in captivity, and deserves more than a passing notice. He has red wattles, with pink blotches about the size of fish scales, variegated sickle feathers, walks on his legs as human like as can be, carries his head high (when he is not sick), and his tail bias. He is a number one bird where activity and eggs are wanted. His get is what the poultry fraternity has been yearning and hankering for these many years. They can out run the circuit preacher, and give the long-winded local elder a tight chase. He can be found at home on all days except Saturday and Sunday. On those days he can be reached with two beers at Peleno's Saloon (the last chance, in a plush stall near the faro table.

Bonypart the Last, the famous French coach cockerel, can be found at home every day except Tuesday. On that day my driver takes him to Brushville after a load of scrap-iron, chopped meat, crushed oyster shells and shorts. He is the great grandson of Lost Art, the medieval capon whose antics amused the French girls around the treasury department in the days of Joan of Arc. He is about five hands high, docked tail, boneless anatomy, mane hangs on the left side to distinguish him from the vulgar herd, and weighs three pounds and sixteen ounces. He is the crowning wonder of the nineteenth century, and a dawning era for the poultrymen. On board the cars at Paris he cost me a cold $1,000. Ten dollars warrants a reasonable hatch of one that will stand up and kick the shell off after being under the hen four weeks.

Cleavland, the world renowned Clydesdale Plymouth Rock male, was purchased from the Plymouth fathers, the only and original. His age is unknown, as the memorandum book that contained a full and detailed account of his birth was destroyed in the Boston fire. But for years his hale and fibrious progeny have discouraged and defied the wandering summer boarder. He is a good roadster on the down grade, and in troublesome times so far has never lost his head. He wears a No. 11 collar, and casts a colossal shadow near sunset. He can be found at home at all hours (but don't tell the chicken collector who gathers relics at night).

Owing to the lack of space in our breeding pens and coops, we have reduced the price from $4.50 to $5.15; no blanks. A prize in each and every package of eggs. A man in Iowa writes me that some of his granddaughters are laying rock fences, results of their bringing up, showing conclusively what can be done. Keep the ball rolling, friends, come early and avoid the rush. Remember, he won't be with us long.

Old Mockshalia (old is here given as a figure of endearment and eclat), the noted and far-fetched Brahma cockerel, was imported direct from a spread-eagle Hindoo Brahma. He was sired by Sobersides, Jr., and Sides by Wagon, and Wagon by Pharoah, Sr. He has a flaring pedigree, and a fine appearance, and his features are "just too lovely for anything." He will eat out of my hand anything from a dried apple pie to a last year's beef steak. He can be reached by rail, and also by foot, at Sangsville; terms changed to suit buyers and other visitors. All are welcome.

Radiator, the nip and tuck Leghorn rooster, was caught in the classic streets of Athens, Italy, or Leghorn, Greece; washed in Grand Pa's Wonder Soap, and fed on Greaser's Condition Powder. He weighs six pounds dressed, without his shoes on, has sorrel flanks with bay sickle feathers, shirred comb, can scratch for his own living, and could find plenty to eat in a full granery. His progenitors are noted for vigor and sagacity, are good layers, some being known to lay an egg every time one forms in the pullet's egg crate. Hens from a distance will be cared for at almost nothing, merely the eggs and part of the fowls. He is much attached to his present home. We keep him haltered in a box stall near the woodshed. An Italian Chiropidist attends to cutting and trimming in the nail department. Terms reasonable; as we stated above, all the eggs and half the fowls.

Scotswhaha, the famous prize winning Langshan cock, the enormous and immense, is now in his eighth year, just in the prime and vigor of early chickenhood, has some of the finest get of any male bird in America, Cape of Good hope, or any other art of the civilized world. He was captured when quite small, in the Highlands of Scotland, by my half cousin Nidus, and freighted to me part way, and sent on the cable the balance. He stands three feet five inches in his stocking feet, waltzes the colored chicken chamber maid boy around by the off ear, and eats nothing but fresh angle worms, boiled mule, corn stalks, baled hay and sweet cakes. He is a good all-purpose fowl. Since we have had him he gat Slido, the charmer; Robo, the perfect, and Moter, the swift. No other fowl in the States can point to such a galaxy of brilliant sons. He can be found at home every day. Office hours, 4 a. m. to 8 p. m.

And now, if any of the POULTRY KEEPER readers are so blind or calonsed to their own interests, and doubt what we advertise, let them call on me. Come, by ones, twos and threes. Come, on foot, in wagons, on the cars, or by steamboat, as it shall not cost you a cent more than is necessary. We will board and clothe you, and pay you good wages for the time being. Come one, or thousands. And, as we said before, come betimes and avoid the gaping multitude.

P. S. We want the above in a conspicuous place. Say the front page, with a taking picture as centrepiece. Something like the frontispiece in our old-time almanacs, or a farm scene of green hills and hayseeds, and a little old woman with a hump on her back, holding up to the view of a wondering crowd the White Leghorn cock that crossed the big waters in the Mayflower. *Sic transit gloria mundi.*

WHY CHICKS DIE IN THE SHELL.

L. B. PETTYJOHN, (NO POST-OFFICE GIVEN.)

I think the POULTRY KEEPER is the best paper I have seen, but I want to go for you all the same. Your letter stated: "Use no moisture until the egg begins to pip," and your directions for operating the incubator enclosed in said letter, say: "Give no moisture the first week, very little the second and plenty the third week." Which is right? In the same directions you state, "Do not let the eggs cool lower than seventy degrees," while the maker of my incubator (A. F. Williams, Bristol, Conn.) advises not to let the heat go above 103 degrees, nor less than ninety-nine degrees, and to keep it at 102 degrees, if possible. Again, who is right? I am not idly criticising either of you—I want more light, especially on the burning question of "Why chicks die in the shell"; also, why they die the latter part of incubation and not at first, under exactly the same treatment? I have read Mr. Campbell's article in the May number, containing much food for thought, but in my opinion it doesn't fully answer why they die. Won't some of your readers answer and explain fully *why* they die? I want more light—"Help me Cassius, or I sink!" I have had the chicken fever for twelve months, and have tried three incubators on several thousand eggs. I keep a record daily and hourly, night and day, of what I do, and give my usual results. First, I select good eggs, fresh laid, or not over fifteen days old, not under nor over size, nor mottled, nor thin, nor over-thick shells, and keep the thermometer at from ninety-nine degrees to 103 degrees. I put in the moisture pans on the sixth day, at which time I test out from ten to twenty per cent. as not fertile. On the eighth to twelfth days I find the eggs invariably doing splendidly, nearly every egg showing a chick "alive and kicking," plainly seen, as my eggs are mostly Leghorns. About the fourteenth day I find the chick has darkened the egg, but find that they are still alive and vigorous kickers. Success assured so far, hopes of the eighty-five, ninety, ninety-five and one hundred per cent. hatches (that I read about—and don't believe) are very high. To sum up results, for every 300 eggs I put in the incubator, do as I may, I can only get about 150 to 165 reasonably good chicks. The balance have died on the eighteenth nineteenth, twentieth and twenty-first days, every egg with its dead chicken showing that the large majority of them died on the nineteenth, twentieth and twenty-first days. A large number of them pip; many of them pip nearly around the shell and then die, or if they kick out they are no good. I hold an inquest on unhatched eggs, and tear open hundreds of them at each successive hatch. Won't some one tell me "why is this thus?" Why die on the eighteenth, nineteenth, twentieth and twenty-first days of incubation? Why not at a sooner stage? Remember, moisture on the sixth day, and gradually increased till hatching commences; then moisture on the glass all the time, and heat ninety-nine to 103 degrees the entire time.

Mr. Editor, I have a theory; it is this: want of ventilation, as no incubator I have seen has it, to amount to much, though all claim it. My incubator has six or eight one-half inch holes, just above the level of the eggs, and more one-half inch holes in the bottom, but I claim that does not ventilate, and why? Because when the incubator is opened the cold, fresh air rushes in, and when the door is closed this air gets warm, then hot: say 102 degrees. Now, hot air rises and sticks under the tank—hottest at the top strata and coolest on the eggs. Hot air expands, so that a part of the little fresh air the eggs got at first finds its way out of the incubator—expands out—then no more cool or fresh air gets in until the door is opened twelve hours later, because cold air doesn't rise up to the tank where the hot water presses it down. In the meantime, during this twelve hours, the chickens already hatched out are breathing this air over and over, again and again; their wet bodies are throwing off exhalations; the blood and mucus in the empty shells is drying up and exhaling a foul vapor, and probably a few rotten eggs or dead chickens in the shell are throwing off foul and fœtid vapors in the moist, hot air. No foul, hot air is coming out, neither is any going in, practically speaking. At this stage, watch them through the glass. The hatched chicks that first came out strong and vigorous are dried off, lively, but panting for breath. Those last hatched are weak and languid. Those pipping out are dying, or feebly gasping for breath—for pure, warm, moist air. The first 100 chicks hatched are good, the next fifty are weakly, the balance "die in the shell." Is my reasoning correct? Now for a remedy: Let some one invent an incubator that ventilates in fact as well as in name. Let warm, moist, pure air be passing slowly all the time over the eggs and chicks, and then out of the incubator, and not stay in it.

My eggs invariably begin to pip on the evening of the nineteenth day. As little or no foul, impure air passes out of the incubator while closed, of course no pure air fit for chicks to breathe, whether they are in or out of the shell, can come in to them in their fœtid prison, but open the door a little, and presto, change! This foul air at once starts out and pure air passes in, but that creates a draught, a cold draught, and that also injures. So again I sum up that the warm, pure air must be coming in all the time, not only during the hatching, but during incubation.

[From "99 to 103" is *not* the temperature. No air *flows* all the time under a hen. If you get 165 chicks from 300 eggs, in *winter*, you beat the hens. The *weaker* ones perish. There are differences of opinion in regard to air and moisture. Let us all try to turn on the light. Thanks for your excellent letter.—ED.]

POULTRY ON TWO TOWN LOTS.

E. B. CRIPPEN, MEAD, NEB.

This last year has been the best I have ever had in poultry keeping, and I have kept fowls for ten years. The worst thing that we Westerners have to combat with, is ruinious prices for eggs, but this year they never were below fifteen cents, and were up to thirty-five during part of the winter, and I had them to sell, too. I have but few hens (only thirty-seven) but they are the choice of one hundred and fifty fowls, and of course they are my very best. I only have the back part of two town lots to devote to poultry, but it pays me big returns for the money and time put in. I have three breeds, Cornish Indian Games, Langshans and Black Minorcas, and I find them just what I want. Of course I have tried several crosses and for *market* purposes, I like the cross-bred birds best and for *general* purpose fowls I like my Langshan-Minorca cross. They laid better during winter and early spring than either of the pure breeds, and when I wanted to get rid of them to make up my pens, and enlarge my yards, they brought me fifty cents a piece for all I had. I also had a Plymouth Rock and Red Game cross, and they laid fair, but outweighed the others. I got ten cents a pound for them and they averaged eight pounds, but did not lay as well as I wished.

This is my first season with green bone feed. I only wish I had bought a cutter sooner. I have a Webster & Hannum cutter and I have more than doubled my egg output. I often get thirty-two eggs per day, and I only have thirty-two laying hens, as the others are sitting. I have a plot of white clover for "green pastures," which I think is far ahead of any green food I ever tried. I only can let them out a short time before sundown, as we have gardens all around us, but by keeping the roosters shut up I can turn all the hens out at once, as none of my neighbors keep chickens, so I am in no danger of getting mixed eggs. I have used sheds this last winter with each house, and think my success in getting eggs so plentifully was, in part, at least, due to these sheds. They were of the cheapest kind, coarse manure roof, and all with brush frame work. The fowls often never left them all day, and as they were open to the south they got all the sun there was to get. I have removed the litter from the sides, and have boarded them up, and am using these same sheds for laying rooms, and shall use one for the sitters a little later. I am having my eggs hatched at Mr. B. H. Irwins, University Place, Neb., by the incubator, and would have got an incubator myself but am away from home too much to care for one.

The season for lice is almost here, and I want to tell your readers what I use and find good, as a preventive, and also to clear them out. I get about one-half bushel of lime and slake it by sprinkling water upon it, just enough to pulverize it finely. When it is cold add ten pounds of sulphur, and an ounce of liquid carbolic acid. Thoroughly stir, and after cleaning the house I shut up the house tight and throw this everywhere, into cracks, on perches, into nests all over the house in general, and sometimes I leave the fowls in during the operation. I do not know where I got this, but have used it for several years and think it splendid for a disinfectant, as well as a lice exterminator.

I wish to say a word for the raised coops for young chicks. I make them about four inches up from the ground, and with a bottom that comes out, and when not all in use I change the bottoms off, so as to let them sun and thoroughly dry. I make the coops all of the same size, and as large as I think best. I never yet have had drowned chicks, and never knew any "varmints" get in, as the front lets down for a porch during the day and up at night.

I am glad you have exploded the ventilator theory, for I lost many fowls before I was willing to give it up, but I don't worry if my houses are as tight in the winter as I can make them; enough air gets in to do.

I have found that overcrowding, either in the house or yard does not pay. I have also found that twenty-five fowls are all that do well together, and unless the yards are very large, fifteen is better, and I would even then rather cut the pens in two and put eight fowls in each.

I have found the KEEPER my best stand-by. I have taken it since 1889, I believe, and could not do without it. I wish we might have twice as much experience from different persons than we do. Why don't some one advertise dark colored Dorkings? I have looked over the ads very carefully, and have not found any.

BIG PROFIT PER HEN.

W. E. FARR, SOUTH BEND, IND.

I often see in the POULTRY KEEPER a statement that one dollar a year is a good average per hen. Now, I want to take issue with you on this point, if you will allow me. Last November my fifteen rose-comb Leghorns started laying. They have averaged, from November 5th to date, eleven eggs per day. There was no let up during the cold weather in January or February. My hens were confined in a small pen, 6x6 feet, being only one-fourth the space they should have had. I feed a warm mash in the morning, composed of equal parts of bran, middlings and chopped feed, with clover hay as a basis, and the proper proportion of animal meal. Whole wheat is given at noon and night. They also get warm water twice each day. Now, I claim that my hens will keep up this record to July 1st. During July the average may drop down to five per day. The first of August these hens will be ready for the butcher, and I will have pullets ready to lay about October 1st. From October 1st to August 1st, I will wager that my hens will average from sixteen to seventeen dozen eggs each, and at an average of twenty-three cents per dozen, sixteen dozen would amount to $3.68; deduct from this $1.25 for feed, and my profits amount to $2.43 per hen. Now, add this to the price I get for the old hens, August 1st, and forty cents is added to my profit. Remember that the cockerels of each hat pay for the raising of the pullets. I further claim that I can manage 1,000 hens in like manner, with the aid of one man, and my profit would be the same per hen, less the man's wages. I have bought five acres, and propose to build up in a few years to a 1,000 hen plant for eggs exclusively.

[Our correspondent must not forget the obstacles that may be met, such as disease, lice, etc. While we sincerely hope the above estimates may be realized, yet too much should not be considered sure in advance.—ED.]

A CURE FOR THE GAPES.

J. R. RICHMAN, YARDVILLE, N. J.

I have found what I believe to be a sure cure for the gapes in young chicks, and as I have never heard of it before, thought perhaps you might like to give it to your readers. I use Persian insect powdor. I catch the chick, and with the thumb and fingers of the left hand, hold open the mouth, and with a gun filled with Persian powder in my right hand, I place the tube of the gun close to the opening of the windpipe, and when the chick opens the windpipe to breath I give a good puff, and the work is done. The chick will gasp and cough pretty hard for awhile, but in less than a half day you would not know it had ever had the gapes. It is surer, quicker and safer than the horse hair, or any other remedy I have ever tried. I have used it this spring on several chicks, and not a single failure so far. I would like others to try it and report.

[The remedy is simple, safe and worthy of a trial, and though we have not used the remedy we believe it will be found excellent.—ED.]

COVERED RUNS.

S. H. BISHOP, CHESHIRE, CONN.

The last POULTRY KEEPER speaks of covered runs. I will describe some I am making. Take boards twelve feet long and six inches wide, and place them three feet apart. Nail in ends of the same boards. Then tack four or five lath across the top, and cover with one inch mesh netting. Now cut a hole in one end, and connect with coop or brooder by a cloth bag some fifteen inches long. This will allow the other end of the run to be moved around as the grass is exhausted, and it is a perfect protection from all outside foes. As I stated in my last, my hens are laying this spring "to the word go," and from my advertisement in the POULTRY KEEPER, and a few other papers, I am selling all the eggs I have from my best flock of sixty Leghorn hens. Of late, the biddies cannot even lay in peace, but often will be robbed in mid-day to satisfy some purchaser who will call.

A GOOD START ON A SMALL SPACE.

J. C. ROBERTS, WEST CHESTER, PA.

I wish to encourage some of the readers of the POULTRY KEEPER, especially the young people, by telling them how a young friend of mine manages a flock of nice chickens in town, where he has no room, only a neat little house and pen in a back yard. This pen is not more than 20x35 feet, but everything is kept neat and clean. This boy attends school regularly, and attends to his chickens out of school hours for the pleasure it gives, besides making a very nice profit.

He keeps a strict account of all his expenses and proceeds, except the scraps from the table of a family of seven. He started on January 1st, 1893, to keep a strict account of his birds. He had thirteen hens and pullets, but one died soon after from an accident. I will give you the account in his own words. He says:

"I have twelve hens and one rooster, barred Plymouth Rocks, confined in a small yard. I feed them three times a day, on mixed feed, composed of bran, ground corn and oats, and shorts; also scraps from the table, and cabbage leaves, and occasionally some whole oats. The feed for four months cost $3.85. I got six dozen eggs in January, for which I received $2.68; February, twelve dozen, $3.78; March, nineteen dozen, $4.67; April, eighteen dozen, $3.38; amounting in all to $14.51; a total gain of $10.66."

He also set one hen on thirteen eggs, from his own pen, which have not been included in this egg account, which makes fifty-three eggs laid by his twelve hens in four months, and during this time three hatched each a brood of chicks.

Being a boy of great ambition and good business abilities, he keeps looking out for a chance to make his chickens pay him still better, and to give him more pleasure by their improvement. He has bought two settings of eggs, from two of the best breeders in this part of the country, and has from this investment a very nice flock of chicks, which promises to be very fine. Out of twenty-six eggs he bought, twenty-five chicks hatched, two of which got tramped to death in the nest, and one died, leaving twenty-two healthy chicks. This shows what can be done in limited space with a little judgment and good care, and I hope that many of our young people, as well as older ones, may be encouraged to give their pets good care, for besides the comfort to the fowls, and the satisfaction of knowing that the best has been done, there will be quite a nice little income.

This boy is a subscriber to the POULTRY KEEPER, and reads it with much profit.

KEEPING THE FLOOR CLEAN.

"AN INTERESTED READER," LANCASTER, PA.

I am a beginner, but think that I am going to have pretty fair success, even though I did lose all of my first lot, except three. The POULTRY KEEPER and *Farm Poultry* have been a great help to me. In fact, I think I could not get along without them. I filled the incubator, made after the Poultry Keeper plan, a second time, and now the chicks are seven weeks old. I have not lost one through sickness, and expect another lot this week. I am very much interested in the moisture question, as I always find quite a number of chicks dead in the shell. Father has an idea that the hot cups touching the eggs is the cause, so he made me some tin rings, a little larger than the cups, to stand them in. I will give my plan for keeping the floor of the mother clean, as it helps me and may be of use to some one else. I made frames of lath, two for each brooder, and tacked bed ticking on each. Every evening I put in a clean bed, as I call it, and scrub off with hot water the one removed. Then, standing it up, I rinse with water, and the bed is clean for the next night. I received my POULTRY KEEPER yesterday and kept at it all through, marking passages I wished to refer to hereafter; so hurry up the next number for an interested reader.

MORE INTERESTING THAN EVER.

J. C. TELLOWER, NEW BRIGHTON, N. Y.

I am a subscriber to your paper, and look eagerly month to month for it. Since its change to larger proportions I find it more interesting than ever. Last month's edition was chock full of valuable information for amateurs, and I think you have done a big thing for your patrons by securing additional editorial force. It was first-class before, but it now takes the cake. The extra cost of subscription is a picayune affair. Go on, Brer Jacobs; let your contemporaries carp and criticise your methods as they will you can stand it. While raking in the shekels they think should come to them, you can afford to laugh at their discomfiture. I have spoken to a number of my friends and urged them to subscribe for the paper, and change their present methods of caring for their poultry. One of my neighbors set three hens on thirty-nine eggs and got seven chicks. Upon inquiry I found that no attempt was made to test the eggs from the time of setting, no attention paid to keeping the nests clean, and he was much chagrined at the result, laying the fault to the hens. I showed him one of your publications, and it was a revelation in many ways to him, and he said he would send his subscription at once.

POULTRY RAISING FOR WOMEN.

BERTHA B. MOORE, PALATINE, KANS.

I have been a reader of your valuable paper but a few months, but I derive much pleasure and profit from its pages. I wish to give one reason why I think poultry raising a good occupation for women. The out door exercise required in taking care of a few hens is conducive to health. Many a delicate housewife, who employs her spare time making fancy work, would find improved health, pleasure and profit in a few hens, providing she went out two or three times *every* day to attend to their wants. This is a point I wish to emphasize. Put on proper clothing, and go out every day. A woman will feel better for being out a few minutes even on a very cold day. Of course cleaning the hen house and shoveling should be done by stronger hands. I generally keep an account of the expense and profit of my poultry, and find that it pays even with low prices for chicks and eggs, and high prices for grain. If one lives near a good market there is no reason why they should not make poultry pay. Some of your readers state that they never sell eggs for less than fifteen cents per dozen and as high as forty cents. That discourages me a little. The market price here for eggs has been ten to twelve cents per dozen for the last three months. I have some spring chicks that weigh from one and one-half to three pounds each. I am offered $2.50 per dozen for them.

I wish to say a word in favor of the Silver Laced Wyandottes, as an all purpose fowl. I have eight pullets of that breed, that have layed, by strict account, 653 eggs from January 1st to May 1st. They have been confined in a small pen made of barrel staves, with an inverted header box for a coop. The common hens run at large, and go to roost rather early. After they are safe in the coop, I let the Wyandottes out, and they ramble around till it is quite dark picking up choice bits.

I have 185 little Wyandotte chicks. My eggs did not hatch very well (I used hens for hatching) but I have lost only five chicks and those a horse stepped on.

FIGHTING THE JIGGERS.

H. A. LANGLEY, SEALAND, WASH.

I am always interested in "Brief Remarks" from readers. I have had three years' experience with poultry. I have used an incubator with very good success. The best hatch I had was from 120 eggs—112 were fertil e—out of which I hatched ninety-eight chicks. I think that is better than hens can do. I had a fight this summer with a small spider-like insect. I have heard them called the "jiggers," but do not know if that is their name or not. I do know that they can take the last drop of blood from a hen. I first tried whitewash, but they seemed to like that first rate, even when I gave it to them hot. Then I threw coal oil around in the house, and set it on fire, standing ready with a good supply of water. Then I thought I had fixed them in good shape, but I believe it hatched out more than it killed, for they were thicker than ever. Next I made a squirt gun out of tin, and took coal tar, one part; water, three parts. I brought it to a boil, and by stirring well, while using, kept it mixed. I took my gun and went for them, and one good dose was all they could stand. It is a sure shot and cheap.

I have a water fountain for little chicks that I think is very good. I take a board, 6x6 inches, one inch thick; bore a hole in about the centre, in which I put an upright, and from the top of that I put two wire loops to hold a beer bottle. I cut the bottom off a small can which I tack to the board, so that the bottle will come in the centre of it.

I have a brooder that I like very much. I take two boards, each four feet long, and one foot wide. I cut one end from the middle to the end, leaving it five inches wide at the end, and on the bottom of the end I tack tin; on the other end I put boards. Under the tin I put a box two feet square. Over the tin I have a door, with rags tacked on the underside. Over the board floor I have glass.

A CASE FOR CONSIDERATION.

EXACT.

In your April issue I noticed a communication headed "A Case for Consideration" in which the writer spoke of a Light Brahma pullet bending down its head and bouncing around like a rubber ball, from the effects of which it died, and he further says that upon examination he found everything all right except on each side behind the legs, and on both sides, where there was fat about one inch thick, and three inches long. Now in your comment you say "The above is one among many similar cases, etc." Now notice: it seemed healthy when examined after death, but the fat was two or three inches thick. Now either the correctness of the communication must be judged, or the editor of the POULTRY KEEPER!

I am a lover of the POULTRY KEEPER. Since taking it we have adopted a number of its methods. We had ten hens last winter that kept us in eggs right along.

This is from one who has read every copy of your paper since the first.

[The effect is due to the bird being too fat, and we presume the writer in April referred to examination after cutting the fowl open.—ED.]

A SOLUTION SOLVED.

J. W. DUNN, ELIZABETH CITY, N. C.

It had been a question in my mind for several years whether it was strictly necessary to wait three weeks for an incubator, and keep eggs waiting and bother with turning and watch that they did not chill. I reasoned with myself and then with my other self (my wife), and we agreed in all which might be material. Then I opened a correspondence with the manufacturers of several incubators. One said it was impossible; another said he would not advise me to do it and gave his reasons, which my other self and myself concluded we could obviate, or at least nearly so, and on March 2d I put 112 eggs in, and at the same time I put two evaporating pans in. I divided the eggs as they were gathered each day, and put the one-half in the incubator, saving the other half for No. 2. I kept this up every day until the twenty-first day of March, when we noticed some eggs in the first tray pipped. I will not intrude upon your valuable space to give each day, but suffice to say that I did not at any time either increase or decrease the evaporation. I had in the incubator, all told, 207 eggs up to the finish (12th of April), I got 126 chicks. I was not satisfied, and believe I discovered the fault, which was in opening the machine so often to put in *cold eggs*. I am now operating differently by putting the eggs in each week, and warming before I put them in. I notice where Mr. J. L. Campbell writes in the POULTRY KEEPER, and calls Mr. L. E. Ross down. He claims "that eggs kept in air so moist that no evaporation can take place, never hatch, as I (Mr. Campbell) have tried to do that thousands of times and failed every time." I must confess that Mr. Campbell deserves much credit for the Job-like patience which he claims to have displayed, for the average man would have become discouraged after 999 times, but Mr. Campbell perseveres for thousands of times, and since I have succeeded in doing this the one time, I must believe there is a little exaggeration somewhere, or perhaps the two evaporating pans, which I had in from the start to the finish, was the right thing, and sufficient evaporation could take place; but at all events I will inform the readers of the POULTRY KEEPER how my second experiment turned out. I will also say that I have no object in writing this to advertise my business, for I have none. I am like my old Brahma hen, having a great inkling for "scratching," and if I scratch over other person's ground, it is because they leave the fence down.

[We are always pleased to receive the excellent letters sent us by Mr. Dunn. We will say for Mr. Campbell that he has been working at incubation for about thirty years, and has made hundreds of incubators and conducted more experiments, perhaps than any man in the world. We value his letters very highly.—ED.]

KICKS A PET THEORY.—BOTTOM HEAT.

J. WOOLSEY, BEDFORD, N. Y.

I have been a reader of your paper for several years, and have been much benefited by it. But I want to give one of your pet theories a kick; that is, bottom heat in brooders causing leg weakness. I use a brooder with bottom heat entirely, and for the last five or six years I have raised about 400 chicks and ducks each year, and have never had but one chick troubled with leg weakness, and that was on account of rapid growth. My brooders are very simple and almost any one can make them. They are simply a box with a sheet iron bottom and an inch and a half of sand on the bottom. A lamp is placed underneath the floor. This makes them warmest in the centre, which is better than to have it heat all over equal. If all the parts are heated, and the chicks should crowd, it would be in one corner, which is much worse than crowding in the centre. I never put more than fifty chicks in one brooder. I think I have better success in raising chicks than any one of my acquaintances, some of whom have very elaborate brooders. I always try to give my chicks plenty of exercise. I think mismanagement, and not the kind of brooder, is at fault nine times out of ten.

[Thanks—kick our theories *hard*. That is the way for all of us to get at bottom facts. An editor can learn.—ED.]

EXPERIENCE IN CALIFORNIA.

MRS. MARY M. ATKINSON, GARDENER, CAL.

I will give you a report of a pen of Plymouth Rocks (cock and six hens), and a pen of White Wyandottes (cock and five hens). From these I set 678 eggs, and sold seventy-five settings from December 2nd to June 1st, 1892. This is not as large a record as has been shown in your paper, but we are highly gratified with it. I still endorse my favorites, the White Wyandottes, and am preparing to cross with Light Brahmas, and see what California's climate will do for the White Wonders. Roup is the worst foe we have to fight here. With turkeys, I have adopted my grandmother's method of stale bread, corn bread, chopped onions, red pepper, and all the sour milk they will use. After the second week, cornmeal with sour milk and pepper, and I have good success.

EXPERIMENTS IN MOISTURE.

C. W. GUILD, DALLAS, TEXAS.

As I am somewhat of a "chicken crank" and have always taken more or less interest in chickens, and have been a subscriber to the POULTRY KEEPER for years, gaining considerable knowledge from it, I am quite interested in the different articles on the incubator and the discussion on the moisture question, and as I have been experimenting some with an incubator myself, I thought I would give you my experience with my last hatch. On April 6th I put 200 eggs into my machine. On the seventh day I tested the eggs and took out twenty-seven that were not fertile, leaving 173 eggs. The first seven days I run the machine without any moisture, and kept the temperature as near 101 degrees as I could, although my man let it run up to 110 degrees a couple of times. On the eighth day I filled my lower moisture pans, and on the fifteenth day I filled the top pans and kept both filled from that time on. On the nineteenth day the eggs began to pip. On the twentieth day I took out seventy-five chicks, and on the twenty-first day I took out eigty-three more, making 158 strong healthy chicks from 173 fertile eggs, or about ninety-three per cent, which I think was doing first-class, don't you? I have tried running the machine with moisture from the start, then with moisture for the last week, also without any moisture, and have hatched from fifty to eighty per cent. But the present hatch was my best, which I think shows that I about struck the proper amount of moisture required. I argue this way: that the first week the eggs did not require any moisture but as the chick developed and matured moisture must be supplied to offset the consumption which would increase as the chick grew, and I accordingly increased the amount towards the end. All of the chicks came out of the eggs nicely, there being no sticking fast to the shell. I think the cause of losing some of those that I did was that the chick developed too fast, as the shell seemed to split open before it should have, or that the chick got strangled, as some seem to say, but as to this I am not well enough posted to say.

FROM THE LAND OF FLOWERS.

CHAS. Y. MILLER, LEROY, FLA.

I received a letter from a brother reader of the POULTRY KEEPER, which calls for more details on the subject of poultry. I had no idea that my letter in the April number would attract so much interest, but I since have had letters from all over the States, and even Canada. Now, one reader wants to know the cost of buildings. I will give him mine, and also some of my neighbors, so he can have his choice. My poultry houses are 10x12 feet, of which I have ten, with a partition in the middle so as to house two breeds. On each of the end sills are 3x3 feet plates, 2x2 sides, and ends 1x3 feet, six feet high, one end nailed to the sill, and the other end to the plate, leaving a space of one inch between each 1x3, all round, for air, sunshine or rain. There is no floor in the house. The cover is of eight inch or ten inch boards, with some cracks in it, for it doesn't do to have tight houses here. I built the houses myself, and can put up two a day. The material for each one will cost not over $2.50; labor, $1.00 for each; making a total cost of $3.50 for each house. These houses being light, I can put them on a slide and haul them from one place to another in my orange grove. The most of my neighbors allow their fowls to sleep in the orange trees. First-class rough lumber here costs $10 per 1,000 feet; dressed, from $12 to $15 per 1,000 feet; second-class lumber, from $2.50 to $8.00 per 1,000 feet. Corn is worth sixty-five cents per bushel, but I do not have to buy any, as I raise plenty on my farm. Some writers claim that oats cannot be raised in Florida. I enclose a sample of the oats I raise, and would like the editor's opinion of it. On the second day of May we had new Irish potatoes, and snap beans for two weeks before that. Strawberries began to ripen on the first of February.

[The oats were as full headed and heavy as any we ever saw.—ED.]

OUR CHICK BUILDING.

B. H. NOXON, ITHACA, N. Y.

We are using a building for young chicks which is proving quite satisfactory, as it is doing double duty, serving as a green house and as a chickery. It is built with hot house sash for nearly the entire roof, and fitted up with a stove, and clay pipe running its entire length. This pipe is about two feet above the floor, and rests on a board platform, extending back to the side of the building. The platform is about three feet wide, and the pipe made a party-line through the middle of it, and this is our brooder, having our "mothers" by the clay pipe. When the weather was so warm that we did not need a fire, we used brooders with lamps. Then on both sides of the building we had shelves for our early cabbages, tomatoes and flower seeds, and protected them from the chicks with wire mesh.

If one does not like the brooder, he could easily divide up, he space under the shelves for places for hens to mother the chicks. If the wife or daughter cares for them it lessens the work many times to go into such a building and care for from eighteen

to twenty-five hens, where it is dry and warm; besides the chicks do so much better during the early spring. They are also protected from rats.

Don't feed eggs or dough, but bake your meal and bran and eggs into bread; dirt don't cling to it, chicks can't waste it, and it is always ready.

ARE HENS FAT WHEN BROODY.

O. P. PHILIPS, AMO, IND.

"Whenever a hen becomes broody, she is fat."—*Poultry Keeper.*

The above, and many similar statements, are so often seen in poultry journals, that I have been led to experiment a little on this question My attention was called to this particular matter last season, in handling my hens early and late, in the season, when they were broody. I imagined I could detect a marked difference without weighing, but it being too late in the season to make a fair test, I resolved to test it this spring, which I did.

I selected six Plymouth Rocks, two hens from a yard I will call No. 1, and two hens and two pullets from yard No. 2. The six were weighed February 17th, 1893, just as they were getting well started to laying. Then, when they became broody, they were weighed again, with an "empty stomach" in each case, and a careful record kept of dates and weights, with the following result:

No. 1. pullet, broody, April 20th, loss, 28 ounces.
No. 2. hen, broody, April 13th, loss 26 ounces.
No. 3, hen, broody, April 10th, loss 23 ounces.
No. 4, pullet, broody Mar. 20th, loss 21 ounces.
No. 4 pullet, broody, Apr. 21st, loss 11 ounces from Mar. 20.
No. 5. hen, not broody to date (May 8), loss 7 ounces.
No. 6. hen, broody, May 6th, loss 31 ounces.

No. 5 and 6 were in yard No. 1, and were much heavier and fatter than those in yard No. 2, which did much the best laying.

From the above I sum up the points as follows: First. Hens do *not* sit because they are fat, but rather because they are *lean*, for as will be noticed the only one that has become broody *twice* has lost a total of two pounds, the largest loss of any; and the only one not broody has lost seven ounces, the *least* of any. Second. Hens in *moderate* flesh will *lay* better than *fat* ones, but will sit sooner and oftener. Yard No. 1 has had but two broody, and in yard No. 2 nearly or *quite all* have been broody.

Now, I do not claim that this experiment *settles* the question, my conclusions are drawn from the results, and I think the test was fair, yet a second *might* reverse the results, but I think not. I would be glad to have others experiment on this and report results

[While Mr. Phillips gives a very interesting report of his experiments it might be well to state a few facts which occurred on the POULTRY KEEPER'S experimental farm, under the charge of the associate editor. A pen composed of several White Leghorns, several Black Minorcas, several Langshans, and some crosses, were fed a morning mash of bran and ground corn and oats, with a liberal supply of meat scraps. At night they receive corn, wheat and oats. They were given all they would eat, with the desire to fatten them without placing them in the danger of becoming over-fat. The first effect was heavy laying, and then followed the broody fever, first with the crossbreds, then with the Langshans, then the Minorcas, and lastly the Leghorns. In each case the birds were very fat. It might also be said that when the associate editor started the experiments he did so with very little hope for the correctness of the theory, and upon weighing those birds that did not show a tendency to set he found in each case a less weight. For instance, the first Minorca hen that wished to set weighed seven pounds, while the average weight of those that showed no desire to incubate, did not average over six pounds. Of course, there may be exceptions to this theory, just as there are exceptions to all rules, but the fact has been fairly proven that, taken as a rule, a hen only gets the desire to sit when she has laid a certain number of eggs and in the meantime taken on more than the necessary amount of flesh. The theory has certainly proven the fact that there is no such thing as an absolutely non-sitting breed, but that all hens can be *brought* to the proper condition to become broody.—ASSOCIATE EDITOR.]

SOME TRUTHS ON HATCHING.

JOSEPH F. KIMLER, WILLIAMSPORT, MD.

Perhaps the within experience may help some one who is wondering how to understand the cause of his troubles. There is but one point on incubation that is not generally known, and that is the temperature on the twentieth day. A machine may be running nicely on the nineteenth day at a temperature of 103 to 104 degrees, and the eggs begin to pip, when, apparently without reason, all progress ceases. I have had a number of bitter experiences, and find that as the egg from the sixteenth day, controls the heat of the chamber, it is necessary to watch very closely for the time when the chamber again controls the heat of the eggs. Let others say what they will six hours after a chick is hatched it must be removed or it will be weakened by overheating. Most incubators drop the hatched chick below. Right there comes a trouble. In a 100 egg incubator chamber the removal of fifteen chicks lowers the temperature one and one-half degrees, and at the same time the temperature of the machine has fallen one-half degree, by reason of the evaporation of the moisture from the chicks, and because they do not have as warm a body after the exertion of breaking the shell, as they had during the operation. Here, then, in the hatching of fifteen chicks, is a fall of two degrees, or down to 101 degrees, quite enough to prolong the hatch. My plan is to have one thermometer swung one-half inch above the eggs, and to run that at 105 degrees, and I can, and have, hatched ninety-four per cent. without any trouble.

Another thing that causes failure is the inattention to little things. I have one machine that ventilates by hot air pressure, the ventilator being below the eggs. A crevice of one-sixteenth of an inch wide, and a foot long, caused by one of the buttons on the door being loose, and which I suppose wouldn't matter, lost me a whole hatch.

Another trouble with beginners is the hurry to fill up the machine after a hatch. I was through that part, too, but I wait now until I get the temperature right before putting in the eggs.

A number of poultry men in our parts lose their chicks through the patent brooders, and right there I blame the poultry journals. I have but once seen anything in the four or five papers I take that condemned the nonsensical plan of having chicks climb a ladder to get to the warmth. They won't do it, and so I tell these men who come to me with their woes. "Use common sense," say I. "No mother hen gets on the fence to brood her chicks" I tried to make the chicks climb, too, but invariably lost fifty per cent. Now, with brooder doors level with the floor, I manage to get ninety to ninety-five per cent. through all right.

This spring has been a hard one on hatcheries. The cold and uncertain weather make the procuring of good eggs impossible, unless in our own yards, and even then it was difficult. No one should be discouraged who has hatched forty per cent. of promiscously gathered eggs. I had in one machine ninety-nine as nice looking lot of eggs as anyone could wish to see, but I got very few chicks out of them, as the day they were brought was seven degrees above zero. The most of them lived until the twelfth or fourteenth day, when, in spite of every precaution, and the addition of a little moisture (in pans), the death rate increased until the twentieth day, and I only got fifteen chicks, and they were weak. So do not judge the business by this spring's experience.

I am too new a hand to deal with the scientific questions that experiment stations are giving out, but I should like to add that our grandmothers knew more about raising fowls than can be learned from the most of the stations' reports. I think there should be less scientific "bogle" used to deceive poultry keepers than is now going the rounds.

GIVES LITTLE MOISTURE.

A. E. NEVILLE, NEW YORK.

I made two Harper brooders, and have now the third hatch in them, and if you can find a finer lot of chicks than they will raise, I would like to see them. I have not lost a chick which I have put into them, and out of 197 chicks only six had leg weakness, and they are now fully recovered, and are nine weeks old. Keep hammering away at the moisture question, as it interests all who run incubators. I have the Prairie State hot air machine, and run it in a cellar, and find with this abominable weather the air is full of moisture most of the time. I run without any moisture for eighteen days, and then put in only one-half a panful the last three days of the hatch, and have have hatched eighty-six out of one hundred fertile eggs, seventy being the average. I have tried moisture from the start, and have drowned the whole hatch, and think where a machine is run in an ordinary brick or stone cellar the less moisture the better the results.

IRREGULAR FEEDING.

When the suggestion is given to give green food to the hens, it is not to be inferred tha they are to be surfeited. Some do not allow green food for a week or more, and then will suddenly give the hens more than they desire. Such a mode of feeding will usually cause bowel disease, and should be avoided. The proper mode of feeding is to give the food in such variety as to permit the hens to select that which they may prefer. Any system of feeding that causes the hens to be deprived at times and over, fed at others, as well as sudden changes will prove injurious.

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Wants an Incubator.—I am a subscriber to the POULTRY KEEPER, the result of a sample copy being sent me by a friend living in Salem, N. J., am very much pleased with it, and would not like to do without it. I want my husband to make me an incub tor, so it will be ready for early winter. I am successful with all kinds of poultry in the old way, simply because I love it. I love to be out of doors, love the work, and love all my pets. The hardest time of it all is when killing time comes, and I have to part with them.—*Mrs. Lizzie G. Staat, Sassafras, Md.*

Use of Kerosene.—I receive the POULTRY KEEPER regularly, and am well pleased with it. I notice in the May number that you recommend the use of kerosene on roosts to destroy lice. Now I take the Orange Judd Farmer, of which Fanny Field is poultry editor, and in the April 22nd issue she states that swabbing the roosts with kerosene is injurious to the chickens, causing lameness. I keep chickens, and have been saturating the roosts with kerosene for over a year every week, and as yet have not had a lame fowl nor any lice to bother them. What is your opinion in regard to the matter?—*G. W. Townsend, Sidney, Ill.* [Fanny Field is rather "off" in her advice. The kerosene will do more good than harm.—ASSOCIATE EDITOR.]

Carbon-di-Sulphide.—In the summer of 1891, I read Boyer's "All About Broilers." In it (I have mislaid the book, and can't find it this morning) I read about a louse killer to use in bottles hung up in the poultry house. I was greatly pleased, for I could see a simple, cheap means for cleaning out vermin. What the name of this stuff, given in the broiler book, is, I cannot recollect. However, I went to one of our druggists, an intelligent man of large experience, and the nearest he could get to the name given in the broiler book was Bi-Sulphuret of Carbon. I bought a pound can at thirty cents, and used it according to directions, but could see no greater effect upon lice than the same amount of water hung up in the bottles would produce. A few months ago you printed a squib of Dr. Schneider, of Paris, and within the space of four lines you write it, "Sulphite of Carbon," and "Sulphide of Carbon." In the May POULTRY KEEPER you write it "Bi-Sulphide of Carbon." What I bought was labelled "Bi-Sulphuret of Carbon," but it was useless. Now, what we desire are facts and information. 1st, is there a compound made that when hung up in open bottles will destroy lice and vermin without injury to poultry? 2d. What is the true name of this compound, and under how many *correct* names can it be placed? I trust theories will not longer be promulgated, but that practical facts and correct names will be produced.—*J. H. Nellis, Canajoharie, N. Y.* [The proper name is Carbon-di-Sulphide.—EDITOR.]

Due to an Injury.—I send you to-day, by mail, a package which contains a lump taken from one of my hens, from which she died yesterday. I have never seen anything like it before, so I thought I would send it to you to see if you had. I first saw it about two months ago; it was then about a quarter as large as it is now. It had grown to the leg, just where the feathers stop, and up the leg to the next joint. She seemed all right, except it was in her way when she walked. Yesterday she seemed to sit around and droop, and died about five o'clock in the evening. I do not know what caused the lump, whether a dog snapped her, or if she got hurt some other way. I would like to hear what you think about it.—*J. R. Thompson, Easton, Md.* [The cause was probably an injury of some kind. Such cases are not uncommon.—EDITOR.]

Eggs Got Cold.—One of my neighbors, veracity undoubted, declares that one of his setting hens left her nest all night (got on another nest by mistake), and he replaced her on the nest and brought out eight chicks from thirteen eggs. The hen had been on the nest for two weeks or more. He declares the eggs were perfectly cold when he replaced her. Will not eggs be killed when they once get cold, or is it possible that eggs after being started for two weeks or so, retain enough vitality to withstand some cold?—*Geo. T. Gerwig, Paris, Ohio.* [Eggs are not necessarily destroyed should they become cold.—EDITOR.]

Thanks the New Editor.—I wish to thank the new editor for the improved quality of paper in the POULTRY KEEPER, and also for the prompt mailing of the same, and hope the paper is permanently improved.—*Mrs. DeL. Sheplee, Woban, Mass.* [The *new editor* tips his hat!—EDITOR.]

Dampness.—I see in the April number that one man thinks lice the cause of gapes I had one hen that had the gapes in February, when the weather was severe, and the hens had to be shut up in their house. I couldn't believe it was the gapes, although she made the same wheezing noise. For an experiment I fumigated her with carbolic acid, and cured her entirely. I think the cause was dampness. I clean my hen house out often, but in a few days the straw seems damp again, and I must remove it. I keep straw and litter on the floor.—*Mrs. C. H. Gleason, Sheppards, Mich.*

"Great" is the Word.—Great is the POULTRY KEEPER, and to the reader who reads and profits thereby, great results are obtained. I started with some scrub stock, and the POULTRY KEEPER, last fall, and commenced feeding for eggs and got them, owing to the POULTRY KEEPER'S advice. Although we had one of the snowiest and coldest winters for the last twenty years, I got eggs when the most of the people's hen's quit laying on account of the weather. I am raising Minorcas and Hamburgs. Would they be a good cross?—*J. M. Thomas, Port Townsend, Wash.* [There would be an improvement as far as hardiness was concerned, but it is a question whether you could get any more eggs than with the pure reds.—EDITOR.

Too Many Cocks.—I have twenty common hens and one Light Brahma cock. I was afraid to set my eggs for fear they would not hatch, and bought eggs from a neighbor who had lots of cocks. The result was that out of two settings seven of the eggs were unfertile. Then I set thirteen of my own eggs, and every one hatched. It is a fact that most of the people keep too many cocks.—*C. M. Lawrence, Cedar Falls, Iowa.*

Chock Full.—I find the POULTRY KEEPER to be one of the best that can be found for genuine unadulterated practical common sense in the poultry yard. If more fanciers would follow the instructions, and put to use the many valuable hints that every column of the POULTRY KEEPER contains, it would be beneficial to them, and there would not be so many failures, The POULTRY KEEPER is like an egg—chock full of wholesome meat.—*John F. Beum, Westerville, Ohio.*

Good Laying.—How is this? I have fourteen hens that from the first of January to the 14th of April laid 594 eggs.—*John B. Vanallen, South Easton, Pa.*

Shanghias.—I note your reply in April POULTRY KEEPER, in which you say: "The Shanghias are not bred now, the buff Cochins, perhaps have taken their place." While it may be true that the old Cochins have gone into the modern Buff Cochins, it does not signify that there is not some one breeding this old variety in its purity. The greatest poultry craze this country ever saw was the Shanghai. What delicious joy and happy triumph it would be for me to once more gaze on this old-time Monarch, especially so to old gray-haired people. I can remember Shanghias in their purity only twenty years ago. I have a strain of fowls that I have bred in line about that length of time. Would it not be probable that someone is still breeding the pure old Shanghias? Won't you ask your thousands of readers to let P. O. Box 95, Watervliet, Mich., know and I will impart the result to your readers.—*W. E. Walden, Watervliet, Mich.* [Will our readers please assist Mr. W. if any of them know of the breed being in existence.—ED.

Lice.—To rid poultry houses of lice, sprinkle well with diluted crude carbolic acid, worth fifteen cents per quart.—*D. L. Wiles, Meadville, Pa.*

Quick Laying.—I have two hens running with chicks. One commenced laying when the chicks were three weeks old, and the other hen laid when her brood was two weeks old. I feed mostly with pure wheat. It gives better satisfaction than any other feed.—*William Trudel, Trenton, N. J.*

Copperas for Roup.—When I have chickens affected with roup, I give them a lump of copperas as large as a hickory nut, dissolved in a gallon of water. I find it a good remedy for that disease.—*J. D., Cornellsville, Pa.* [You do not mention the dose.—ED.]

Drinking Fountain —I have been taking the POULTRY KEEPER for some time, and am well pleased with it. I find many suggestions that are good, but I never saw a drinking fountain as simple as the one I have in use. I take a common tin fruit can, and one and one-half inches from the bottom I make a c oss-cut, three inches wide, and press it in, so it makes a place for the chicks to get their bills in.—*J. C. Montgomery, Roxabell, Ohio.*

Made an Incubator.—I made an incubator from the plans as given in your paper, only using thick paper instead of sawdust, which makes outside box only one inch larger each way, and much easier to make and I think the paper is better than the sawdust. The paper must be one-eighth of an inch thick.—*A. J Koehel, Waterloo. Ills.* [The sawdust is intended to *absorb* and *hold* the heat. Paper will not answer. —ED.]

In For Life.—I am an old subscriber to the POULTRY KEEPER, and at this time have my subscription paid for this year and next also. I intend to keep it up the rest of my life, for the good it has done me.—*R. W. Robbins, Dallas. Tex.*

Don't Like Scrubs.—We like to read your paper very much. as we can get a good many good points from it, concerning the raising of poultry. We have been in the business but a short time, and only have scrubs, but we find they are not what we want. We find that thoroughbred poultry pay best because if we had fowls we could sell some eggs, while now we lose the sales.—*John Vanderstet, Grand Rapids, Mich.*

Big Eggs.—In the May number of the POULTRY KEEPER I see that Theo. Campbell, of Lexington, Ky., writes that he has a rose comb Black Minorca hen that lays eggs, six of which weigh a fraction over one pound. It is a good weight, but I must go him one better: On the 29th of April I set the third setting of eggs from a single comb Black Minorca hen (eleven eggs) that weighed thirty-one and one-half ounces. When it comes to big eggs, the Minorcas are in it.—*E. P. Bowditch, Seattle, Wash.*

Head Lice.—I am troubled with head lice on my chickens, but have found a sure cure. Take equal parts of kerosene, camphor and sweet oil, shake well together, and apply with a small piece of cotton cloth.—*Irving L. Rivenburg, Talcottville, Conn.*

Contrary Hens.—I have sixty-five hens and the "fever." My experience would fill a book, and be very funny. My greatest trouble now is with sitting hens. They are more trouble to me than all my babies. They want to set right where they are, and when I move them into the nursery they rebel and are not so anxious to set. I should think you would be sick and tired of hens, and would want to go into some other business.—*Mrs. W. E. Wood, Athol, Mass.*

A Good Showing.—I am very much interested in the POULTRY KEEPER, and I think it is worth a great deal more to me in raising chickens than I pay for it. March, 1892, I bought twelve Light Brahma hens and a rooster. Three of the hens died, which left me only nine hens. From them I raised fifty-eight chicks, sold thirty-eight cockerels, and had nineteen hens left, which began to lay in December and January, and have been laying ever since. I have now eighty-nine little chicks, and they (the nineteen pullets) laid fifty dozen eggs in four months. I like to attend to them, and they give me a good profit.—*Mrs. Alice Lazenby, Chester, Pa.*

Feels Grateful.—There are many in our vicinity who think they know all about poultry, but I am sorry for them, for sooner or later they will come to grief if they do not take the POULTRY KEEPER. I take other journals, but never has an editor been as obliging as you have been, and I feel very grateful to you for your kindness. I wish your paper unlimited success.—*R. S. Kaufman, Kelly Point, Pa.*

Double-Yolked Eggs.—In your May number is an article on cross-bred fowls, taken from the Germantown *Telegraph*, in which the Brown Leghorns are quoted as laying the smallest eggs. I have just weighed twelve eggs from pullets, one year old, that draw the scales at one and a half pounds and one-half ounce. This seems to me to offset the above. Then I have one egg, (not weighed with the above twelve), from an old hen, that weighs three ounces, good weight. But this, I suppose, has a double yolk. I am going to put it under a hen. I had one from the same hen which I put in a former setting, the outcome of which was a well-developed chick as to head and breast, but the back part of the body was the size of two chicks, and not strong enough to come forth. I have hatched two well developed chicks from double-yoked eggs, but as a general rule they are a failure.—*S. J. Rhiem, Omaha, Neb.*

Don't Like Eggs.—The POULTRY KEEPER is always a welcome visitor, and I could not get along without it. I see an article in the April number on feeding eggs to chicks. Now, I have tried it, and came near losing my flock. I say it is no feed for young chicks. I find nothing like granulated oats and bread soaked in milk. I feed the above for ten days with good success, then I give wheat. I made an incubator last winter from my own plans. The first hatch I got nineteen chicks out of thirty eggs; the second hatch thirty-one chicks from thirty six eggs. I also made my own brooder, and now have forty-seven chicks left from the fifty hatched. Some are seven weeks old. I think I have had good luck for a new hand.—*R. E. Miller, New Haven, Mich.*

ORIGIN OF THE PLYMOUTH ROCK.

The Plymouth Rock is said to have been the result of crossing the Cochin male and a Java hen, and then crossing the pullets with a Dominique male. The fact is that when the breed first came into existence quite a number of breeders began to cross the Dominique with other breeds, in order to secure the barred plumage and yellow legs. It was quite a long time before the feathered legs were bred clear of feathers, and the result of the crossing by so many left the breed very ununiform, the Drake strain being clearer and lighter on the plumage, and the Haywood somewhat dark. For awhile there was a "Corbin," or Dorking shaped strain, and when the breed became well known and admitted to the standard, the requirements brought them to a certain shape and plumage which has aided uniformity. They now breed as true as any other breed, as all breeds vary somewhat in the light and dark color of their plumage. Pullets sometimes have a dark stripe on the fronts of their shanks, but this passes away gradually. Cockerels as a rule have yellow shanks from the start. The yellow legs are not as distinct, however, as with the Wyandottes. The white Plymouth Rocks are the result of annual selection of the lightest colored birds, though some are "sports" from the barred.

PREJUDICE AGAINST BLACK FOWLS.

There seems to be a prejudice against the black breeds on the part of some, but for what reason is difficult to conjecture. The only real objection that can be entertained is that they are not as easily dressed for market as some other kinds, owing to the black pin-feathers; but as it requires only a little extra care to remove them, the objection is not a strong one. The black breeds are some of the best we have. The Langshan, a black fowl, is an active forager, the hens good layers, and they are hardy. The skin is thin, like paper, and the breast is well covered with meat. As a table fowl it is far superior to any of the breeds with yellow legs, and should be one of the principal market breeds. The Black Cochin is a very hardy breed and deserves a place on the farm for that reason. The Houdan, which has dark legs, is one of the best of the table breeds, and so is the Russian. If the prejudice against black breeds could be removed, our markets would be supplied with poultry of better quality.

CROP-BOUND FOWLS.

If the hens have access to any substance that they can pack in the crop, such as dried grass, old hems rope or rags, it often occurs that the passage leading from the crop to the gizzard will be obstructed. Should this occur give the bird a teaspoonful of melted lard, and work the contents of the crop with the hand, which can be easily done if it is full. If relief is not obtained make an incision in the crop, of one inch in length, about midway of its top and bottom, remove the contents, draw out the obstruction from the passage to the gizzard, sew the edges together, and the bird will feel no inconvenience.

HATCHING YOUNG GUINEAS.

The Guinea is a native of the tropics, and does not begin to lay as early in the season as the hens. Do not allow them to become wild for want of kind treatment. If they are fed in the barnyard once a day, they will soon learn to come up regularly. The young should be hatched in warm weather, as they are industrious foragers, and do best when in the fields.

THE RELIABLE INCUBATOR.

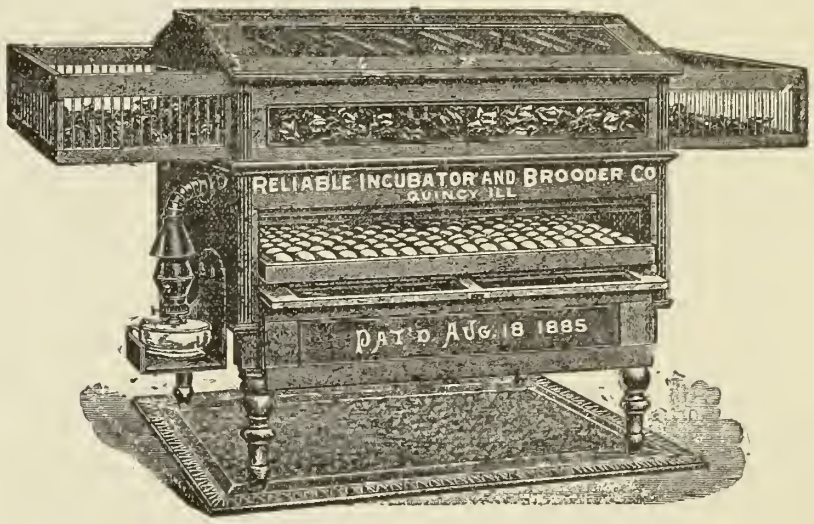
We present in this issue an illustration of the Reliable Incubator, made by the Reliable Incubator and Brooder Company, of Quincy, Ill. We have never had an opportunity of testing the incubator, but we have received many favorable letters in regard to it, among them some who are competent to judge of its merits.

Testimonials from the customers are certainly very flattering to the makers; Mr. John Jack, of Minneapolis, Kan., having hatched over a thousand chicks with the Reliable this season, which are now about ready for market, and he states that the machine is all that is claimed for it. Mr. Reed Muller, Farndale, Ill., hatched from eighty-five to ninety-five per cent.; Mr. John Lawler, 457 Third street, New Orleans, got 170 chicks from 200 eggs; Mr. T. B. Hobb, Maysville, Mo., got 135 chicks from 150 eggs, and others have also done fully as well.

There are six sizes, from fifty-five to 400 eggs, and ranging from $16 to $55. There are also several sizes of brooders made. The illustration shows a combined incubator and nursery brooder. It is a hot water incubator, heated with a lamp, is self-regulating, and equipped with all the modern appliances for air, moisture, turning the eggs, etc. The nursery brooder is sent with the incubator shown, all at one price, but the company also makes special brooders for larger chicks, and claims many advantages.

The Reliable will be on exhibition at the World's Fair, Chicago, and in constant operation, which will afford visitors an opportunity of judging of its merits. This will be a great undertaking, as eggs must be put in daily and the chicks come out all hours.

A more detailed description of the incubator can be had by addressing the company for a circular, which is sent free to all desiring. The house is one of the reliable ones in Quincy, and though Quincy has been unfortunate in having such men as Waldo to contend with, yet she is one of the headquarters from whence satisfactory incubators are shipped to all portions of the country.



THE RELIABLE INCUBATOR.

BUYING AN INCUBATOR.

The man who buys an incubator for the first time should never let it be known until he has learned how to manage it. If inquisitive persons see it at the depot with his name on it, and begin to ask questions say it is a folding bed, a book-case, a patent refrigerator, an ice box—call it anything but an incubator, because, when it gets noised around that Mr. Blank has an incubator, and is going to hatch chickens by steam, people will come in droves, and the services of a policeman may be necessary to keep the mob from ruining the grounds and playing smash with things generally in the rush and push and scramble to see how the thing works, and unless the machine is locked up in a room and the key lost, the poor, perplexed incubator man will be kept busy from rosy morn 'till dewy eve explaining the mysteries of artificial incubation to the eager, gaping crowd, who won't know any more about it when they leave than before they came.

And before the hatch is due, dozens of people will ask him every day, when the chicks will be out. They are all going to be there then, sure, and will come early and stay all night if necessary to see the thing through. Of course the children must come too. It will tickle the dear little tads almost wild to see the chicks coming out of the shell, while the incubator man opens the machine doors for the seventieth time during the day, and smilingly says: "There now, children, don't handle the eggs too much."

Of course, he talks smilingly, for he was a little tad himself, once; but deep down in his heart he feels like he could bite a very large piece out of—of a strawberry shortcake.

But, if the chicks don't hatch! Ye gods and little fishes! How people will laugh and sneer at the fool chicken crank who imagined he could make a box and a lot of hot water hatch eggs "jist like a hen." His neighbors and friends will smile in a particularly sarcastic and aggravating manner when they meet him, and he will be the butt of their jests and jokes, and he will feel like braining somebody.

"Hallo, Blank! when yo' going to steam up eggs again?" "When you going to start your steam hatcher?" "The steam box for hatching eggs didn't pan out, did it Blank? Well, I could have told you so. You kaint imitate the hen." "Know'd the thing yo' call a hatcher wouldn't hatch. Cost big money, too. Well, the fools haint all dead yet." "Blank, I must say you are about the blamdest idiot in the State, to try to hatch eggs that sort o' way. It kaint be done, an' I told yo' so at the start."

These, and similar expressions he will hear daily if he makes a failure with his new hatcher, until life becomes a positive burden, and the poor man wishes the incubator sunk a hundred fathoms deep in the ocean.

And yet, no one but himself is to blame. If he had got his incubator home quietly, and urged his wife not to mention it, and locked it up in a room out of reach of the children and prying eyes, and kept quiet about it himself instead of bragging about having an egg hatcher in every crowd he got into, the case would be different.—*Southern Fancier.*

ROUND OR SQUARE ROOSTS.

"Isn't a small round roost, on which the chickens can cling tightly, the best?" asked Grandma Perkins. "That's the only kind we used when I was a girl, but my grandson, John, tells me they have a new-fangled idea now." "Small round roosts," replied the Judge, have ruined many a fine chicken. In the majority of instances, as you all know, chicken coops are very cold, unless the owners are considerate in the matter of their fowls' welfare. In clinging to these small roosts the fowls' feet are cramped and benumbed, and it takes a very little nip from the frost to cause a bird to lose a couple of toes or even an entire foot, for a frost bite is seldom noticeable until sloughing or bleeding sets in. The best roost is a two by four scantling turned flat side up, with the corners smoothed off. On such a roost the chickens can squat down comfortably and cover their feet and shanks with the warm body and breast feathers."—*Farm, Stock and Home.*

YOUNG PULLETS.

The pullets will grow faster when they are separated from the young males than when they are allowed to run together. In feeding the pullets it is not necessary to fatten them, but they should be kept in a growing condition. A mess of meat twice a week will assist them, but if they are kept with the males the latter will help themselves at the expense of the pullets, as well as worry and annoy the pullets. The object should be to have the pullets fully grown by October, as November is the month when they should begin to lay. Stunted pullets, or those that do not grow, should be sent to market with the young males. If there have been a large number of pullets hatched, it will pay to look them over, select the largest and best, and market the culls, so as to provide more room, and give the selected pullets a greater opportunity to reach maturity before cold weather puts in an appearance.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates, 50 cents per Agate line ($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

TO THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

WE do not know anything about pet stock. This is no child's paper.

WE know that our readers are busy with crops at this season, but send on your subscriptions.

FOR one dollar we allow three subscribers. For sixty cents we send this paper and a book.

WHY is not the goat and the donkey scored? They belong in the poultry department at shows.

NO WORLD'S FAIR SUPERINTENDENT of poultry yet, but the swans and other aquatic fancy birds are at Chicago.

NEVER cross the breeds if you can avoid it, but, should you do so, always cross two pure breeds together. Get away from the mongrel as far as possible.

"FEATHERS or no feathers,"—that is the question which is ransacking the breasts of Cochin breeders. All of this worry is over a few feathers on the legs.

REMEMBER that you cannot get good egg producers and choice market fowls in the same breed. Each breed has only one talent in which it excels.

THE men who manage our fall fairs need education on poultry. Some of them do not even know that a chicken deserves a place on the fair grounds.

RUB a little sweet oil on the heads of your hens. You will be surprised at the result. It is now the remedy for nearly all the diseases of this season.

IF you believe that a silver dollar is worth only sixty-four cents, just send them to us. We will *redeem* every one at a hundred cents, in subscriptions. Try it.

MR. W. P. WHEELER, of the New York Experiment Station, writes us: "I see that you have Mr. Boyer with you, and I do not think you have made any mistake in your man."

DOW IS on deck again. This time it is in the *Fanciers' Review*. Dow will never keep down as long as he can get into the *reading* matter. Halliday will break loose next.

SOMEBODY declares Editor Davis of the *Southern Fancier* to be the original "Uncle Rastus," but we cannot verify the charge. As an editor, however, he is at the front.

ALTHOUGH we give methods for preserving eggs, we will frankly state that we never yet knew of anyone going into such a business who made it pay. *Fresh* eggs cannot be imitated.

THERE is "lots of trouble on the score card man's mind." Scores don't tally, birds vary in one hour, scores no longer electrify, and Sternberg won't let up. If somebody will only get up to Kansas and throttle Sternberg, the [illegible] might be smooth, but Sternberg [illegible] worth a cent, and that is [illegible]

THE Seattle Poultry Club will give a show this winter, the date not yet fixed. It proposes to form a circuit, and to invite an Eastern judge to do the work.

WHEN your birds are supposed to have cholera, just look well for the *head* lice. Your birds have no lice. Certainly not, but look on the heads just for the fun of the thing.

THE New York city commission house of Peck & Bevans has been removed to 334 Greenwich street. They make a specialty of poultry, and advertise that fact in the POULTRY KEEPER.

DON'T try to get an "all purpose" fowl, for in aiming to get too much in one you will get nothing at all. If you desire hens that will lay themselves to death, you must be satisfied to make some sacrifices.

THE article, "Value of Hen Manure," is going the rounds, credited to *Farm and Home*. It was stolen deliberately, and, if that paper gave it as original, it is guilty of doing more than we expected.

THREE papers for one dollar, *viz.*: POULTRY KEEPER, *Farm Poultry* and *Fanciers' Review*. Or you may select the *Southern Fancier* or *Fanciers' Month'y*, the latter being a California paper.

IT will soon be time for the gate money of county fairs to go to some rich man's fine horse while the poor man's fowls will be crowing in a back shed, in company with pigeons, white mice, and other "pet" stock.

KEEP this issue. You might search every book store in the country and not find as much on preserving eggs as we give in this number. All the known methods are presented. It is the third time we have given the article.

ALL the "logic" in favor of securing prize winners by breeding male and female Plymouth Rocks alike in color is all moonshine, and all the side allusions, by way of embellishment, to White Birminghams, and other ancient breeds, will not alter the case.

THE poultry department of the *Southern Planter*, Richmond, Va., is a credit to that journal. Mr. J. F. Jackson, the editor, is working hard to advance the poultry interests in that section. He is an admirer of the POULTRY KEEPER, and offers it as a club with the *Planter*.

THE Langshan Club desires its members, and others who are interested in Langshans, to write short articles and forward the same to W. M. Hughes, Newport, R. I., a premium of ten dollars being offered for the most practical article. All articles should be in by August 15th.

OUR two Yankee editors, up in New England, are finding errors in the journals they edit, each looking for mistakes made by the other. Well, errors are common. If anyone finds any errors in this paper, we will consider it a favor to inform us. They get in, too, sometimes, and the type makes us say many things that we do not mean. As long as we give plain "chicken talk," however, our readers will not care for a few errors.

A NOTED judge states: "When Mr. ——— scores a pen of White Leghorns one week and I score them the next week within one-eighth of a point of him, you must have poor judgment if you condemn the judging." The above remark was in the *Poultry Herald*, and we withhold the names. It is easy enough for judges to come within an *eighth* of a point on a White Leghorn, in the *total*. But always look at the *sections*, and the "one-eighth" (if there is such a thing) does not fill in to make the two cards harmonious.

MCFETTRIDGE'S book is for sale by us. It gives information about the temperature for hatching, moisture, ventilation, how to trim the lamp, time card for incubators, brooding small chicks, food and care of ducks for breeders, feeding hens for hatching eggs, eggs for hatching, how to feed little chicks, how to feed young ducks, how to dress ducks for market, how to dress young chickens, the incubator house, brooder house, celery for feeding ducks, short notes, economy, sanitary conditions and medicines. Price, fifty cents per copy.

"PROFITABLE POULTRY FARMING" is the title of a book by Mr. M. K. Boyer, price twenty-five cents, which is for sale by us. He is also author of "All About Broilers and Market Poultry Generally," and the book will be found well worth the price. He states facts just as he has met them on his farm.

MESSRS. STERNBERG AND BLUNCK, in the *Fanciers' Journal*, hit the "value of the score card" a blow that will not soon be forgotten. Of course it will be considered as the work of the "opponents," but facts are not easily ridiculed. A little more Sternberg, and an additional Blunck will place the ridicule on the other side.

THE A. P. A. should have more men like Mr. George O. Brown. The Southern members wish him to be a candidate for Secretary, but he plainly states that he will not work, ask, plead, or pull wires for any office, or be connected with any faction or clique. If he accepts the office it must first seek him. We admire Mr. Brown for the position he takes. Now is the time to heal all animosities and destroy all factions.

UNCLE MIKE BOYER lit his pipe, and sat back in his chair, in order to read of the trials of Editor Hamilton in regard to the errors said to be found in the *N. E. Fancier* by Editor Hunter. Uncle Mike read the article and remarked: "If Hamilton has to set up all of the type for his paper, read the proofs, sweep out the office, do all the job work, kick the press, and play with the baby, too, then I'll be switched if I believe he ever looks at a chicken." The above remark of Uncle Mike was because Editor Hamilton stated that uncle Mike raised corn for hogs.

BROODER HOUSES.

Brooder houses are not now in operation, and it is useless to visit them at this season. From now until winter, broilers will be in little demand. Large chicks, of about three pounds weight (not larger), will bring the best prices. Do not keep the cockerels too long, or they will sell as adults.

SELL FOWLS IN THE FALL.

If you bought eggs of pure-bred fowls last spring, and have something to spare, the fall is the time to advertise *fowls*. A little two-line or three-line advertisement will cost you but a small sum, and will enable you to sell your surplus. This reminds us that now is the time to buy pure-bred fowls. From this month until October or November the yards of the breeders will be full, and they will gladly reduce stock at less than regular prices. Now is the time to buy, and now is the time to sell. No one desires to keep too many fowls on hand over winter.

FREEZING OF THE COMBS.

Some time ago we requested our readers to make experiments with rose-comb and single-comb fowls, with the view of testing the effects of extreme cold on the combs. Mr. W. Stellwagen, of Garden, Mich., who gave the matter his attention, relates his experience as follows:

Having noticed a number of articles from the editor to the effect that a single-comb fowl would stand as much cold as a rose-comb, without the comb freezing, I concluded to test the matter myself, which I did the past winter. As the result may interest some of your readers in cold localities, I herewith present it. I placed a number of fowls with single combs in a pen of rose-combs of the same variety. They had the same chance in every way, and were just as healthy when put in. The tips of each single comb were frozen, while the rose-combs were not touched at all. The result has fully satisfied me of the superiority of rose-over single-combs for climates as severe as ours, for the rose-combs gave excellent results in egg production the whole season, while the singles were obliged to stop laying several times on account of their combs chilling from our twenty-five degrees below zero weather. None of these fowls were outside of the house all winter.

The above information is valuable in showing that if eggs are desired during the winter the fowls should be so protected as to prevent their combs from freezing, as hens will not lay when injured by the frost. It is true that "twenty-five degrees below zero" is not often met, but the protection will be economy of food as well as more eggs. There are those, however, who claim that the rose-combs have no advantage, and for that reason we desired our readers to test the matter, and report their results.

KEROSENE EMULSION AND LICE.

Some of our readers desire us to repeat the kerosene emulsion, which formula we have frequently given. There are several methods given, the following being according to Prof. Riley:

Soap.....Half pound.
Kerosene.....Two gallons.
Water.....One gallon.

Use hard soap, cut into slices, and boil it in the water until the soap is dissolved. Add the boiling solution of soap (away from the fire) to the kerosene, and churn the mixture by means of a force pump and a spraying nozzle for five or ten minutes. The emulsion, if perfect, forms a cream which thickens on cooling, and should adhere without oiliness to the surface of glass. Dilute, before using, one part of the emulsion with nine parts of water. The above formula gives three gallons of emulsion, and makes, when diluted, thirty gallons of wash. A frequent cause of failure is the attempt to form an emulsion by churning together a small quantity of kerosene and a large quantity of dilutent. Only a very unstable compound is thus formed. The very essence of the process requires that the oil shall be broken down by driving into union with it a smaller, or at most, an equal quantity of the emulsifying solution; after which, if a genuine emulsion is formed, it may be diluted to any extent with water. No insecticide is equal to the kerosene emulsion against lice. It is much more important to make the treatment thorough than it is to have a strong emulsion. A two per cent emulsion is as strong as ever need be used against plant lice if the application be thoroughly made. Much weaker emulsions have given good results.

WHAT IS CHOLERA.

We claim that cholera is a *rare* disease, and that what is known (or styled) as cholera is really indigestion or the result of over-feeding. Roup is also mistaken for cholera at times. Cholera always *kills quickly*, and is also accompanied by intense *thirst*. "More fowls," says a writer in the *Wisconsin Farmer*, "are buried from *supposed* cases of cholera than by the dread disease itself. Cholera is of miasmatic origin, epidemic and very contagious. Probably the principal cause of the disease is overcrowding, the keeping of too many fowls in one place, which causes bad sanitary management. Unwholesome food is also a cause. Ward, in his book, says: 'The symptoms of chicken cholera are not well understood by the people generally, and it is probable that some men have that disease on the brain; so much so that, whenever they lose fowls by any unusual disease that they do not understand, they attribute their death to cholera. Many fowls go to their grave (so to speak) by other diseases and cholera is blamed for sending them there.' A fowl that is afflicted with cholera has a dejected, sleepy and drooping look, and does not plume itself. It has a great thirst, and its gait is slow; it gapes often. In some cases the fowl becomes very weak, staggers and falls over. The comb and wattles turn either a pale or a dark color. Diarrhœa sets in, the discharge being either of a greenish color, or something similar to sulphur and water. Later on it becomes thin and frothy. Then comes general prostration, the crop fills with wind and mucous, the food is not digested, the breathing is heavy and quick, the eyes close and the fowl dies. An autopsy held on a fowl that died of cholera will show the gizzard filled with dried up food, or greenish matter, and the crop inflated with sour mucous and food. The liver will be enlarged and flabby, and so tender that it will mash in the hand, and much conjested. The crop and the intestines are inflamed, the latter filled with a greenish matter. Sometimes the heart is also enlarged. Unless the case does not show these symptoms it is no well, defined case of cholera."

We offer a new method of learning the guitar or banjo, the place for fingering being marked so plainly as to enable one to learn an accompaniment in a few hours, without a teacher. The price of the book is fifty cents, but we offer it, and the POULTRY KEEPER one year, for eighty cents. The method is entirely different from any other, as it shows where to pick the strings, how to make the notes, and how accompaniments are produced.

READ THIS TWICE.

We do not sell birds, eggs, thermometers, incubators, or any article advertised by our advertisers. We have no list of commission merchants, and have no way of learning who they are. We aim to secure reliable advertisers, however, and we receive but few complaints. Don't write us for prices of birds or eggs.

COLD STORAGE.

Pack the eggs in wooden cases in excelsior. Have nothing near the eggs that will decay, and use only fresh eggs. An ice-house, refrigerator, or any kind of cold storage will answer. About thirty-four degrees is the temperature usually used, but we believe forty degrees better. Eggs should be kept as near to the freezing point as possible without being subject to cold that will freeze them.

THE PIGEON,

We wish again to say that this is a *poultry* journal. We take no interest in pigions. We regard pigeons as an evil. They carry lice and disease from one poultry yard to another, steal their food from the troughs of the neighbors, and are a *nuisance* to any section. They may be profitable, and all that sort of thing, to some, but we prefer that their merits be extolled in some other journal. Space with us is too valuable to waste on pigeons.

COMPARISON AND SCORING.

The question whether a bird should be "scored" by giving value to the different sections of the body, or *compared* with other birds on exhibition, is one that is being discussed. Scoring is well enough if correct scoring could be practiced. We have no doubt of the honesty of judges, but believe it impossible for them to give a correct score. True, comparison may not be better in certain respects, but the score card system permits of fictitious values, and gives a bird notoriety that is not deserved. Birds vary, and they cannot be *perfect*. The score card goes too high in the nineties to create confidence. No bird can score ninety if correctly judged.

THREE EGGS A DAY.

It is amusing to notice how quickly one reports a monstrosity, and it often happens that a boast is made of something that should really be concealed. In the *American Poultry Yard* a reader reports three eggs a day, as follows:

"I have a Heathwood Game hen that laid one hard-shelled and two thin-shelled eggs in one day, and a very large double-yolked egg at 4:00 o'clock p. m. next day. This is no mistake, as she was penned alone. Same hen has laid this spring six double-yolked eggs, averaging three and one-half ounces each."

In the first place we do not doubt the claim. *Any* hen can be made to do the same thing, and when one lays an egg weighing a quarter of a pound it is the result of the same cause. The hen *was too fat*. That is all there is to it. A very fat hen lays eggs of abnormal size because her condition is such that she cannot do otherwise, and she is really of but little value, as she lays but few eggs. Fat hens also lay eggs with thin shells, or without shell, and they are also more subject to diseases than other fowls.

FACTS ARE STUBBORN.

Our good friend, Editor Pierce, of the *Fanciers' Gazette*, denies point blank that that two matings are necessary to produce male and female *exhibition* birds. We will remind him that the leading breeder of Dark Brahmas does not breed his females from the same pen from which the males come, and the greatest of winners with Partridge Cochins will affirm the same thing. Brown Leghorns may also be put in the same class. If we are to refer personally we will name Messrs. Newton Adams, Sherman Hartwell, and James Forsyth as authorities. Even the assertion of Mr. Felch, promulgated years ago, and now endorsed by Mr. Pierce, that Plymouth Rocks correctly mated for the show room will produce exhibition males and females, rests on the original assertion of Mr. Felch only, and is not borne out by *facts*. We know of what we claim, as we bred them for fifteen years at one time, and made a test of the matter, procuring high-scoring birds for that purpose as well as breeding from our own stock. Mr. Felch's book is full of "*matings*," and he has admitted publicly that he uses *disqualified* birds in order to secure prize winners.

It will not do to go back to the columns of the *Gazette* to show our position, as we may prove more than would be desired by the editor, and when he attempts to refute the claim that *show* birds are not always mated for breeding, or that two yards are not required to produce correctly marked males and females, he is undertaking a hard task, as *stern facts* do not support him conclusively.

MISTAKES WITH POULTRY.

Mistakes cause all the failures with poultry. The *Southern Cultivator* makes some excellent points on the subject, which are worthy of mention. It is a daily occurrence to *economize*, but such economy as is sometimes practiced is really *extravagance*. Here are the remarks:

"The man who puts fifteen eggs under a hen, instead of eleven or thirteen, so as to make sure of a good lot of chicks, wants more than he will get. We don't like to deal with that kind of a person because he displays greediness in the first place and lack of good chicken sense in the second place. A hen will, in nine cases out of ten, hatch more chickens from thirteen eggs than from fifteen eggs, simply from the fact that not more than one or two hens in a dozen ordinary farmyard hens are large enough to cover fifteen eggs.

"Another mistake consists in consolidating broods by giving all the chickens to one hen when two or more hatch at the same time. Don't do it. It may seem all right, but it is all wrong. In warm, dry weather, the large broods may do fairly well, but just let a rainy, chilly spell come along and then see how fast the smaller and weaker ones drop out of the race. Let each hen have her chickens. It would be much better and the chickens would grow faster and larger if each brood consisted of only seven or eight chickens. There is no disguising the fact that the secret of success in poultry keeping consists in keeping all flocks small.

"The person who advocates putting 100 or 200 little chickens all in one bunch in a brooder knows nothing about the necessity to observe natural conditions in poultry raising. Nature intended for a hen to sit on a small number of eggs and to care for a small number of chickens only, and nature never intended for 100 hens to run, eat and roost together, nor 100 chickens to be penned up together."

To use too many eggs for one hen is to save the time of an extra hen, but it is a loss of some of the chicks, and when a hen is compelled to hover more chicks than can find standing room under her, some of the chicks will perish. Never try to economize in space, nor aim to accomplish more than is within the bounds of capacity.

TOO MUCH OF A GOOD THING.

We have always refrained from giving advice that makes the poultry business appear as if one had a lifetime, with no work to do, to engage in raising fowls. The following from the *Poultry Bulletin*, is a reminder that some kinds of advice is not easy to follow. It says:

"Peel three or four onions and chop them up with a cutting knife in a wooden bowl for your fowls. Onions are one of the most healthy vegetables to feed poultry raw. Some poultrymen give each pen of fowls a raw onion every day, and say that while they practice this they have never had a sick fowl."

Now, who has time to sit down and "peel three or four onions," and then *chop* them. The cost of the onions, and the *labor*, would be greater than the value of the eggs. One might as well skin the angle worms for the chicks, or sift the meal for his cow. When a poultry man has to peel onions for poultry, parch the corn, or mash the potatoes, he might as well conclude that he is fooling away his time. The above also states that "onions are one of the most healthy vegetables to feed poultry raw, and that a "raw onion every day" given *each pen*, when practiced by poultrymen, lessens sickness. Well, that depends on the size of the onion, and even if as large as a pumpkin we doubt if it will prove a safeguard against roup or over feeding of grain.

Why a "wooden" bowl should be used we cannot surmise. Some persons would be foolish enough to suggest that the onion need not be chopped at all, especially if it is *boiled*, and a bill of fare might be hung against the fence, by which onions might be ordered peeled, unpeeled, boiled, fried, roasted, or on the half shell.

But the recommendation may apply to a small flock. The man who has a chicken farm would have to employ a force of peelers, and his onions would be costly. In place of potatoes he might try Saratoga chips, and on Sundays labor could be saved by using canned lobster or sardines, as peeled onions might effect the eyes and bring tears.

THE LEAGUE OF AMERICAN POULTRYMEN.

The League of American Poultrymen was organized with the view of accomplishing something, that something being the fixing of the dates of shows, and a certain sum of money was contributed by those who became members.

We have been asked to suggest what should be done. If the object was to fix dates of shows then an effort should be made to do so. If invitations were not sent out with the view of attempting to secure the endorsement of the poultry associations such should have been done, and a meeting should have been called for this year.

We have always claimed that clubs and other associations of the kind would be short-lived, and our belief rested on the fact that there was too much "man worship" mixed up with them. That is, instead of having the most capable man at the head the honor would be given to some millionaire whose chief recommendation was the fact that he had plenty of wealth, although so far as financial assistance to the club of which he was the head was concerned he stood on a par with him who could subscribe but the lone dollar, while the promotion of the interest of the club was no better in the millionaire hands than with others.

It is a fact that at one time the same man was president of three different clubs, and yet he did not seek the positions, the members simply honoring him because he was wealthy. They respected his pocketbook more than they did themselves, for there was no reason for giving him the position in preference to men who had given hard work to the poultry interests. For years the worship of the pocket-book had much to do with selecting the officers of the A. P. A., but such is not so much the governing factor at present.

We do not believe that all of the *respectable* men must necessarily be wealthy, and we take no stock in man worship. The League has tried the experiment of a wealthy man as President Now let it try some other kind of a man, and aim to accomplish its objects. The present president did not seek the office, did not desire it, and did not expect it. He was simply put in by those who fancy that no club or association can be successful unless patronized by men of wealth, and that such men should be honored and worshipped. For our part we will say—away with such snobbery.

BOOKS AT FIVE CENTS EACH.

The following are *special subjects*, and though they are *back numbers*, yet each is worth a year's subscription.

You cannot get a high-priced book that will give so much on the subject selected.

Any of the following for only *five cents in stamps*:

Testing Eggs, (illustrated.) August, 1885, Sept., 1890; June, 1891, and June, 1892, the latter full of illustrations.

How to Ship Poultry. Toulouse Geese (description). Sept., 1886.

Plan of a Broiler House. Breeds of Ducks. The West Chester Gape and Roup Cure Oct., 1886.

All About Roup, eight columns. Nov., 1886.

All About Cholera, seven columns. Dec., 1886.

Caponizing (illustrated). Jan., 1887, and March, 1892.

Gapes, four columns. March, 1887.

All About Turkeys, seven columns. March, 1892.

All About Lice (illustrated). Oct., 1887, and Dec., 1891. The latter shows the kinds of lice, magnified.

Poultry Diseases. Crop-Bound. Egg-Bound Feather Pulling. Soft-Shell Eggs. Hens Eating Eggs. Bumble Foot, Scabby Legs. Worms (six columns on diseases). A Big Egg Farm (prices). Nov., 1887.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Feb., 1888. Also April, 1892.

Poultry Houses. April, 1887; Oct., 1888, and July, 1891. Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec., 1892.

Fertilization of Eggs, five columns. The Ferrett Feeding for Eggs. Sept., 1888.

Description of Breeds—Light Brahmas, Plymouth Rocks, Pile Leghorns, Langshans, Houdans, and Brown Leghorns. Five columns. How to Place the Thermometer, (illustrated.) Nov., 1888.

How to Feed for Eggs. How much to Feed. The Kinds of Food. Condition Powders. A Whole Book in a Small Compass Nearly eight columns on Feeding, with tables and proportions. Oct. 1891.

Brooders, Incubators, Appliances, Poultry Houses, etc., (many illustrations). Aug. 1889, and Aug., 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte. Fertilization of Eggs. Scoring Games. ——1889.

A Whole Library of Points. A grand issue. Aug., 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892.

Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept., 1891.

Each one of the above issues contains other valuable information also. The subjects named are the *leading* articles.

The reader should keep this for reference. It will save much time inquiring for special articles.

The issue on Poultry Houses, Brooders, Appliances, Feeding for Eggs, Caponizing, Prices for the Whole Year, Preserving Eggs, Turkeys, Points on Hatching, Points on Raising Broilers, Testing Eggs, and some others, are worth fifty times the price, as there is no book published that can even compete with a single number.

RATS IN POULTRY HOUSES.

When a rat effects an entrance so as to be able to come from some secure place and depredate on young chicks or ducks, it can destroy so much as to render the work of a whole season profitless. No matter where the rat may be it *must* be caught or killed. Traps are useless, sometimes, and the placing of poisons or alkalies in the holes may be of no avail. If the hole is found, plenty of boiling water poured therein may cause the rat to come out, but in that case a good dog must be ready for him, and as there are often several holes of egress, care must be taken that the rat can only come out in one direction. If the water does not bring him out, put plenty of ground caustic soda (concentrated lye) or potash in all the holes. Use it dry, as it will readily absorb moisture. If poison is tried, first gain the confidence of the rats by feeding them at several places. They may not touch the feed at first, but after awhile they will expect it. Place the feed for them regularly where they can get it, and continue it for several weeks, if necessary, and when you are satisfied that they are no longer suspicious, then put poison in the food, and the chances are that all the rats in the neighborhood will be killed, or those escaping death will hastily leave.

DISINFECTING FOUL PLACES.

The Boston *Scientific News* calls attention to the importance at this season of getting rid of all vile smells about dwellings, and makes this practical suggestion: The article commonly used to disinfect foul places is chloride of lime, but in reality it is not of much value. It may, and generally does, remove bad smells, but the cause still remains, as the chloride simply destroys the gaseous emanations. The much advertised disinfectants are usually catchpenny nostrums and unworthy of notice. One of the very best known disinfectants is old fashioned "copperas," or sulphate of iron, which can be had very cheap. A barrel of copperas would probably weigh 300 pounds, and can be purchased at wholesale price at one and one-half cents per pound. And every family ought, especially in warm weather, to have a supply of it on hand. A couple of handfuls of copperas thrown into a bucket of water will soon dissolve, and it can then be used freely, and is a valuable disinfectant. The best plan is to fill a half barrel or keg with water, and suspend within it a moderate sized basketful of copperas. In this way it dissolves more rapidly than when thrown to the bottom of the wooden vessel, and thus a supply is always at hand ready for use.

AN INCUBATOR SAFETY LAMP.

To prevent a lamp from becoming overheated, the designs in this issue are given, from Capt. Philips, of Chicago. An incubator lamp differs from one sitting on a table, in not having a free draught direct from the top, as the heat must be conducted into the incubator; hence, they sometimes become warmer than is desired.

The originator, who uses it, states that the heat of the lamp (5) and wick tube (3) unite at the base of the burner, water surrounding them, vapor being generated, which unites with the flame heat, and gives greater warmth. The description is as follows: The reservoir for water (1) reaches up to the crown of the burner, keeping the oil tank (2) cool, and also cools the wick (3). Four one-eighth-inch tubes to the wick (3) supplies it with oil. The burner and chimney is shown at 5. The cost of constructing such a lamp is less than one dollar. We have not tested the lamp, and know nothing of its merits, but the originator claims that it is not only cheap but safe and reliable, as he has used it for several seasons.

FEEDING SELECT FOODS.

Because clover is suggested as food for laying hens, there is no reason why it should be substituted for all other foods. Clover is really a food that should be given as an assistant to the grain. Too much grain is heating and fattening, yet a laying hen requires grain and plenty of it, as she is compelled to produce something. Meat is a food that is of very valuable service to laying hens, yet it should not be fed too liberally, as a hen cannot thrive on meat exclusively any more than she can on grain or on clover. There is an end to all excesses. We have seen hens lay wonderfully on corn, the corn being supplied liberally, but they reach a point when they become very fat, and corn no longer answers their purpose. They then require some other food—something that contains less fat and more egg-producing elements. As pullets, and before reaching maturity, they did not fail on corn as their bodily wants utilized more corn than when they matured; but as the demands of growth ceased, the tendency to fatten increased. We find no fault with the feeding of corn. Corn is the staple crop of America, and no amount of argument will convince farmers that it is not excellent for fowls, which is a well-known fact, yet better results will be obtained on a variety of food at all seasons than on some exclusive article. When farmers secure eggs on certain foods, they will not listen to a change; but if the farmers would keep accounts of their expenses, they would learn that there are fifty-two weeks' comparison to be made in each year in order to determine whether any particular food is profitable or not. The profits may be large for a week or a month, yet but a small profit for a year may be the result. Experiments with foods would be of advantage.

CHOLERA AND LICE.

In a majority of cases the so-called wholesale destruction of flocks from cholera is not cholera at all, but the work of lice. On some farms, where the hens hide away at night here and there for want of some kind of suitable shelter, the trees, woodpile, sheds and under the barns will be swarming with lice, and dead hens may be found every morning, being literally eaten alive by myriads of lice, the cause being attributed to cholera, or some disease, simply because the owner cannot comprehend how lice can be so destructive. On such farms there may also be found an apology for a hen-house, the floor of which will be covered for a foot or more with droppings, being the accumulations of years, but which house will be found useless, as the hens will prefer exposure to all kinds of weather rather than venture in the pest-hole filled with lice and called a poultry house. Such farmers wonder how it is that they get no eggs, and they naturally ascribe their failure to "there being no money in chickens," when the fact is that if they were as negligent of their horses, cows, sheep, or hogs, as they are of their hens, they would go into bankruptcy the first year. Before undertaking to cure cholera, examine for lice, as in many instances the lice are at the root of all difficulties.

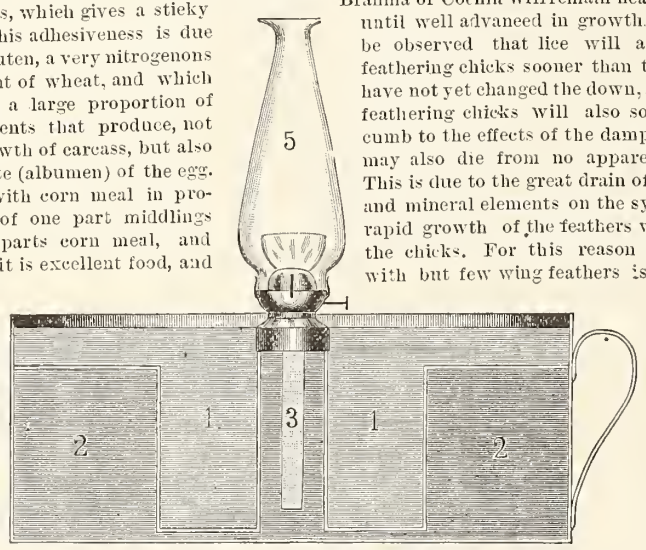
OBJECT LESSONS TO BEGINNERS.

Every beginner who contemplates keeping poultry should begin at the bottom, with a few hens. He will then have an opportunity of studying their habits and of noticing those details so essential to success. In other words, as no beginner can expect to make a success from the start, it is cheaper for him to suffer a loss from a few hens and a small flock than to incur risk with more. Another object lesson is the management of a small incubator.

Nothing will assist in teaching a beginner how to manage a flock or how to raise early chicks for the market so well as the careful and daily observation of an incubator, in which every process of hatching is revealed, and by the handling and personal management of the brood in a brooder, all the methods of feeding will be resorted to, and, even if failure results, the information gained will not only be valuable, but a pleasure will be derived therefrom in the knowledge gained.

MIDDLINGS AS POULTRY FOOD.

Middlings are sometimes known as "ship-stuff," "shorts," "seconds," and "dark flour." As millers endeavor to have the flour for family use as white as possible, they bolt very closely, the result being that the middlings are separated for sale apart from the flour. Now, the middlings really contain the greater proportion of nitrogenous matter, while the larger portion of the flour is starch. This may be demonstrated by moistening a small quantity of middlings, which gives a sticky mass. This adhesiveness is due to the gluten, a very nitrogenous ingredient of wheat, and which contains a large proportion of the elements that produce, not only growth of carcass, but also the white (albumen) of the egg. Mixed with corn meal in proportion of one part middlings to two parts corn meal, and scalded, it is excellent food, and hens so fed, if given meat and green food, should not fail to provide plenty of eggs.



AN INCUBATOR SAFETY-LAMP.

CORN AS STAPLE FOOD.

The advocates of corn claim that the cows that are fed liberally on corn meal and ground grain are the best butter producers, and that it is the best food for hens. The claim is true, but such cows are not fed exclusively on corn. If a cow received nothing but ground grain, she would soon become out of condition. The same rule applies to hens. While corn is excellent for laying hens, yet it should compose only a portion of the ration. Laying hens require a greater variety than cows, as the large proportion of lime in the shells and the greater concentration of the egg constituents, compared with milk, demand all the varied elements.

CROSSES AS THEY SHOULD BE.

Similar birds are more suitable for crossing with each other than are those that differ very radically. Single comb birds should be crossed with birds possessing a similar comb, and if they can be matched in plumage, so much the better. For instance, there is no better cross than that of the Black Minorca cock with Langshan or Black Cochin hens, or the Brown Leghorn with Partridge Cochin hens. This position of matching combs and plumage has been sustained by experiments, which showed that better results were obtained by crossing White Leghorn cocks with White Cochin hens than a cross of the White Leghorn and Brahma, though the latter cross is an excellent one. No doubt the Dominique-Leghorn is better for crossing with the Plymouth Rock than any other of the Leghorns, while the White Minorca would cross well with the Dorking, though not of the same color. The legs and comb, being very nearly the same, would make such a cross better than if a Leghorn be used instead of a Minorca. There is such a thing as crossing two breeds so opposite in every respect as to produce only a mongrel, and hence judgment should be exercised in all crosses made.

CAPONS IN SUMMER.

Have a place for capons, separate from other fowls, and keep them growing. It is not necessary to feed them so as to make them fat, but keep them in a healthy, growing condition. If you have any culls, they may be used for practicing the art of caponizing. It is best to receive instructions from some expert; but one can learn by practicing first with a dead bird and then with a live one. Beginners should be careful to avoid cruelty or causing unnecessary pain. If a mistake is made, kill the bird immediately and examine it well, in order to avoid further mistakes.

RAPID FEATHERING OF CHICKS.

When a brood of chicks is observed, especially if they are not pure bred, and hatched from eggs procured of persons, keeping different kinds of hens, the chicks will appear to differ greatly in a few days. Those possessing Leghorn, Dorking, Game, or Hamburg blood will begin to shoot out the tiny feathers of the wings and tails immediately, while the chicks that are strongly Brahma or Cochin will remain nearly naked until well advanced in growth. It will be observed that lice will attack the feathering chicks sooner than those that have not yet changed the down, and quick feathering chicks will also sooner succumb to the effects of the dampness, and may also die from no apparent cause. This is due to the great drain of nitrogen and mineral elements on the system, the rapid growth of the feathers weakening the chicks. For this reason the chick with but few wing feathers is hardy, as the food eaten goes to the nourishment of the body instead of to feathers, and such chicks will endure more cold, grow faster and keep in better health than the others. Chicks that are feathering rapidly will be benefitted by a ration of chopped cooked lean beef three times a week, and should have nourishing food.

COST OF FOOD FOR EGGS.

Experiments in feeding, and in computing the value of eggs, show that if no estimate is made for labor, one dozen eggs can be produced at a cost of about six cents for food, or about half a cent per egg. If all of the food allowed to hens was converted into eggs, the profit on a dozen eggs would be large, even when prices are very low, but much depends on whether the hens convert the food into eggs, flesh or support of the bodies. It is a fact demonstrated, however, that when a dozen eggs are marketed, they carry from the farm but little of the nutritious elements of the soil in proportion to their value in market, and on that account alone they are as profitable as anything that can be produced on the farm.

HOW THE FEED IS WASTED.

There is often a waste of food. If given too much the hens get too fat, and do not lay. Such food is a waste, as it not only prevents egg production, but is more expensive. Feeding insufficiently is a waste, as it is better to sell or kill the birds than to feed them in a manner that does not permit them to be profitable. It is a waste to omit a variety of food, as the hens cannot lay unless they have the materials with which to produce the eggs required. It is a waste to feed a flock of fowls for eight or ten months, and then sell them a few weeks before they may begin to produce something. Such is a common practice. Many persons will carefully feed a flock from March to January, and if no eggs are laid, disgust is the result, and the consequence is the birds are sent to market about Christmas, though in a few weeks more they would probably begin to lay. Never sell a hen on the approach of spring. No matter how unprofitable she may have been in winter, it is usual for all hens to lay as the winter begins to turn into spring, and the only way to retrieve loss is to hold on to them, so as to get some return for food consumed.

FEEDING EGGS TO POULTRY.

Stale eggs (not rotten) are sometimes fed to fowls and chicks, and it is frequently recommended to do so by many poultry writers, but our experience is that if eggs are fed for two or three days the result will be bowel disease. It may be advantageous to add an egg or two to a large mass of soft food, but to feed eggs as a diet is injurious. Young chicks or turkeys, just from the shell, are sometimes given hard-boiled eggs, finely crumbled, as their first meal, but such food should not be given after the first day of feeding. Eggs that are not fresh enough for table use may be fed twice a week, but even then it will not be advisable to feed the eggs if stale enough to give off the slightest odor.

PIGEON PENS.

The best results from pigeons, when squabs for market are desired, is to make wire-covered runs for them, keeping them confined. This may appear strange to some, but experience has shown that when pigeons are allowed their freedom, there is quite a heavy loss from hawks, cats, boys, and even "sportsmen." When kept in wire runs, the sexes must be equal, as an extra male will break up the matings. Pigeons pay a larger profit than hens, if kept in runs, but the yard and house must be kept clear of lice. It is unfair to neighbors to let the flock fly wherever the birds prefer, but by confining them, a more satisfactory result is secured, and no damage is done others.

WATER-PROOF MUSLIN FOR RUNS.

Muslin does not usually last more than one season, but as it is a cheap material, it can be economically used to cover the runs for little chicks. In fact, it can even be made to do good service in providing cover and shelter for the adults, where an outside run is desired. If one application of boiled linseed oil be given the muslin, it will be very nearly waterproof. The advantage of muslin is that it is cheaper than glass, retains the heat longer and the runs covered with it are always light.

EXPOSING EGGS IN THE NEST.

Although eggs should not be exposed, yet it does not indicate, because a hen leaves her nest for a long time, during a cold spell, that they will not hatch, though it is not safe to allow them to be exposed under such circumstances. We once had a hen engaged in incubating nine eggs in a nest hidden in grass under bushes. By accident she was shut up in the henhouse one night, and during the night a light snow fell. The hen went to her nest the next morning, and in due time hatched three chicks, which shows that there is much more vitality in eggs than would be supposed under some circumstances.

BANTAMS FOR EGGS.

The Bantams lay larger eggs than any of the full-sized breeds, in proportion to their size. It must be remembered that though a Bantam is small yet it consumes but little food compared with large breeds, and four of them can be kept in place of an ordinary hen. They are not suitable for market, nor will their eggs sell readily, but for home use and where there is but little space, they prove very profitable, for despite their diminutive size, they lay very fair eggs, and are easily kept in confinement.

CUTTING THE WINGS.

It is a common practice to trim the wings of the hens that are addicted to flying over the fence, and some of our readers wish to know if such will interfere with their laying qualities. Not in the least. If you are not particular about the appearance of the fowl the wings may be trimmed. Never pull out the feathers, which will grow out again, but if trimmed no new feathers will appear till the hens molt. It is best to prevent flying over the fence, even by trimming the wings.

A LIGHT POULTRY-HOUSE.

This poultry-house may be of any size, or may be arranged inside as preferred, the object being to give the design of a poultry-house that is well lighted. The door at the end is for summer and is intended simply to prevent dogs or cats from entering. In winter it is removed and a close-boarded door substituted. The entrance hole (A) is closed with slats at night, and is arranged so that the slats may be covered with a drop door, if so desired. There is also a closed entrance at B, a ventilator being at C. The roof may be made flat, and tarred paper used, if desired.

A BIG CHICKEN BUSINESS.

Some weeks ago when we described the Guernsey cattle at Ellerslie stock farm, we promised to tell about the poultry. When it was decided to make dairying the chief business feature of this farm, the next study was to decide what sort of live stock would best work in with it. The wastes of butter-making—skim and buttermilk—have considerable feeding value. The question was: What animal will make the most profitable use of these wastes, all things considered? The decision swung between the pig and the hen, and the hen won. Not exactly the hen, but that intermediate stage of life between the egg and the egg-maker that was known as the broiler. One reason that went to give the broiler this decision was the fact that there is a home demand on this farm alone for 1,500 broilers and uncountable eggs every year. Like a good farmer, Mr. Cottrell decided to supply the home tables as far as possible first and then sell the surplus.

A business as big as this promised to be needed a head to run it. They want experts at Ellerslie and Mr. Jas. H. Seeley proved the man for the hour in this case. He started with nothing, to build up a poultry department that would do so well on skim-milk that the Guernsey cows would be shamed into giving even a richer product. When I visited the place, the incubators and brooders were in good running order and about 1,500 little chicks were stuffing themselves for the frying-pan. We shall let Mr. Seeley tell, in his own words, the story of his practice and plans.

NO CHANCE FOR THE OLD HEN.

"How much of a business do you plan to do, Mr. Seeley?"

"I expect to sell 20,000 broilers a year. There is a market for 1,500 on the place. The balance we send to New York where we shall work up private markets at the better restaurants and clubs."

"Any special season?"

"No, we shall run right through the year and thus be able to supply our customers at any time. Our ten incubators have been running steadily since June and will have no rest this year."

"How many eggs will you need?"

"About 40,000 to produce our number of broilers. If we can raise one chick from every two eggs put in the incubators we shall do well, considering the eggs we have. Our incubators have a capacity of 3,000 eggs, which is about right for 20,000 broilers a year."

"You don't breed your own eggs, then?"

"Oh, no, not yet, though we shall do so when we can get the hens. At present we buy all our eggs, which is one reason why we need so many."

"Where do you get them?"

"We buy of farmers who bring them to us. We pay three cents a dozen above the market price for those we think will suit us. We try to get select eggs, that have been handled as we direct. At present we get all the eggs we need, but in the beginning we could not get enough to run us."

"What regulations do you have to guide farmers?"

"We want eggs that are gathered every three hours in this cold weather. (This interview took place in early March.—R. N.Y.) There must be a good supply of cocks with the hens, and they must be well housed and sheltered. We would prefer them in small flocks and to have them fed on wheat instead of corn."

"Take farmers as a rule; what are their greatest mistakes in providing such eggs as you want?"

"They keep too many hens in a flock. Generally all run together and roost in a big house. The stock is generally all mixed up—with no uniformity. They do not keep their houses cleaned and many hens are lousy. Most farmers feed altogether too much corn. We have settled the fact in our own minds that corn-fed eggs will not hatch so well as those from hens fed on wheat.

"Would you advise farmers to get thoroughbred stock to improve their flocks?"

"Never give a scrub man a pedigreed animal—that is all I can say about that. A scrub man will make a scrub of everything he touches."

THE EGGS AND WHAT COMES FROM THEM.

"How do such eggs turn out, anyway?"

"You can see that the chicks are all sorts and kinds. Every breed seems to be represented, from Brahmas to Brown Leghorns. Many of the chicks are evidently too closely inbred and are weak from the start. One great fault in the average farmer's flock is that new blood is seldom put in, and the birds are inbred too closely."

"As a rule, however, the eggs hatch out *something*, don't they?"

"Yes; but of course now and then we get a lot that is a clear loss. For instance, one man sent us a lot for which we paid $42. The total hatch from these eggs was six chickens. Seven dollars a bird is too much!"

"Given an egg, how do you make a broiler?"

"After standing long enough to 'settle,' the egg goes into an incubator. We use Prairie State and Pineland incubators—ten in one room. The incubators are run in the usual way. When hatched, as soon as well dried, the little chicks are put in brooders, which are heated by hot water pipes that keep the little fellows a good deal more comfortable than an old hen could."

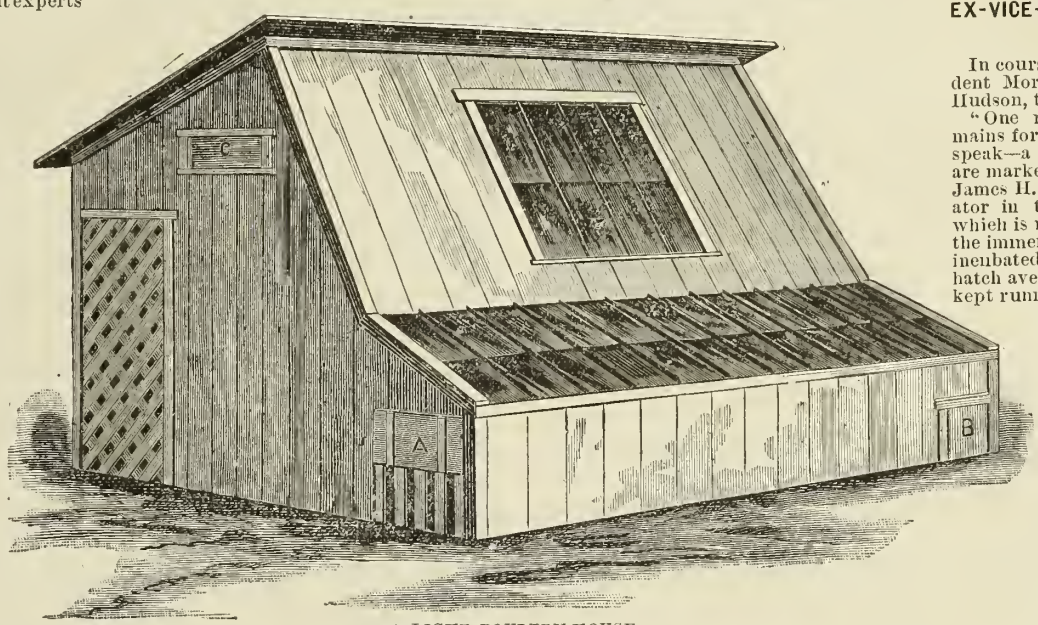
"About all that get to the brooder live, do they?"

"We expect to lose about one-fourth of those put in the brooders, from one cause or another. They have all the skim-milk they will drink, and are fed crackers, oatmeal, bread crumbs and cracked wheat for the first week, gradually getting so they eat soft food of bran, cornmeal, shorts, etc., with meat and green food. The idea is to keep them growing all the time and feed them all they will eat."

"Ever feed cotton-seed meal to chicks?"

"Yes, a little is good. It is somewhat constipating, and the tendency of all chicks forced as these are is to looseness of the bowels. We believe that a small amount of the cotton-seed meal corrects this. We also feed a little salt now and then."

"What meat food is best?"



A LIGHT POULTRY-HOUSE.

"We propose to experiment and find out which is better for us, cut bone or dried meat. That is a question we have not fully settled. The proper feeding of a broiler is a science that can be learned only by long experience and observation. You can't possibly *tell* a man just how to do it."

"When does a broiler graduate from your house?"

"At ten to twelve weeks old. A good bird should then weigh one and one-half pounds, dressed. The average price of a pair of such birds is one dollar. We propose to sell to clubs and private families—where the Ellerslie butter is sold. Such private custom is worth twenty-five per cent more than the usual wholesale trade and can be developed the same as a market for eggs or butter."

TO SECURE GUARANTEED EGGS.

"You propose to breed your own hatching eggs?"

"Yes and some to sell too."

"What breeds shall you get?"

"White Plymouth Rocks for broilers. They grow rapidly and their color is best for the trade we are after. For eggs we propose to breed White Minorcas."

"Shall you buy hens or eggs to start with?"

"Eggs. We have 1,100 Plymouth Rock eggs ordered to begin with and 100 Minorca eggs."

"How many hens will you need?"

"Between 500 and 600 will be enough to produce the eggs for the broilers. We shall keep them like breeding pens about twenty-five hens to one cock—well fed and cared for. We shall develop our egg trade and get together a flock of Minorcas large enough to supply it. We shall also keep about 1,000 ducks."

"Any special trouble with poultry diseases here?"

"No. We have had no roup or cholera yet. We are careful to keep disease out. A good sharp axe is as good medicine as we know of."

"What green food do you feed?"

"Cabbage and hay. We have also fed ensilage."

Mr. Seeley's plans for the future are excellent, and Ellerslie broilers and eggs are sure to make names for themselves in the trade. The broiler and incubator houses are models for convenience and comfort for the chicks. Nothing has been spared that would help start the business right. The Guernsey cow and the Plymouth Rock hen will make a strong combination that will leave no waste in the manufacture of hay, ensilage and grain into human food.—*Rural New Yorker.*

GUINEA FOWLS AND THEIR VALUE.

It is strange that so few guineas are kept on the farm. They are pretty fowls, peculiarly interesting in their habits, indefatigable foragers, and really excellent for table use, as their flesh, though somewhat dark in color, is, when properly cooked, delicious, having a flavor much resembling that of wild game. For their egg production alone, guineas are well worth keeping. The hens begin to lay in March, if the season is favorable, says *Cultivator*, and continue until frost, thus bridging over the time when common fowls are indulging in their annual moult. Their eggs are dark brown in color, having remarkably thick shells, and though smaller in size than those of chicken hens, yet their greater richness of flavor more than makes up for the diminution in size. In market they are said to bring a superior price, being much prized by housekeepers for cooking purposes, especially for making a nice cake. During summer and the pleasant weather of spring and fall, guineas prefer to roost out-of-doors, and to spend their days away from the house, roaming over distant woodland and meadows, where they make their nests in secluded spots on the ground, hollowing out a place in the loose earth beneath low bushes or wide-spreading dock leaves. They are monogamous by nature, preferring but one mate and showing great affection for each other, though should the flock not contain an even number of sexes, two or more hens will go with the same male and all lay in the same nest most harmoniously. The hen does not usually sit till late in the season, the time of incubation being four weeks, and though their eggs hatch well, but few chicks are raised, as the little ones are remarkably tender and delicate, so susceptible to chill from rain and dew that if a flock doubles itself in a season when left to its own devices it is about as much as one can expect. Raised in this way, the young guineas are wild and shy as partridges, and when needed for the table have to be hunted down like wild game.

KEEPING FOWLS FOR PLEASURE.

The majority of those who keep fowls for pleasure, endeavor to have the pure breeds, and to conform them to the standard, but it does not indicate that because a bird is well marked in plumage, and otherwise beautiful, that it is the best for utility. Those who keep poultry for pleasure only, should credit the amount of pleasure derived (if such could be done) on the balance sheet, but those who keep poultry for profit must not always expect too much pleasure. There is at times some hard work to do, and, with practical persons, no moments can be lost, and the safer mode is to disregard the outer markings and breed for vigor and prolificacy, though many beautiful birds are sometimes the best to be had. What we desire is to impress the fact that pleasure should always be sacrificed to profit, but both may be combined by judicious and experienced persons.

EGG-BOUND HENS.

When the hens break down behind it indicates an unhealthy condition of the reproductive organs, and is caused usually by the hens being too fat. It is, however, often caused when the male is extra large and heavy, or by jumping up to or down from high roosts, or even from injury, but in a majority of cases it is the result of having the hen in a fat condition and in company with a heavy male.

LICE.

Mrs. Emma J. Melette writes in the Denver *Chicken* as follows: Do not use sulphur, as it is liable to do harm; nor carbolic acid, because it is needless; nor kerosene, because it will blister and take off the skin. Common lard is just as good, even as olive oil, but it must be warm, and the only way to put it on successfully is with the finger. A dirty job? Well, yes it is, and if you happen to be at all sensitive or nervous it will make the cold chills run down your back to see how many heads of lice one square inch of poor little chicken-head can contain. In putting on the grease, always grease clear around the lower part of the neck, for a greased ring they dare not cross, and many will be killed that otherwise would have escaped into the down of the body. Put just a little under each wing, and a little around the vent. It is not a very good plan to let the chickens get wet until the grease is dry, but I have greased them thus by the hundred, and have never lost one. When the effect of this is gone, dust them well with Persian insect powder, and if they have a mother, dust the mother also. It does not pay to get an old, stale, poor quality of this powder; better pay more and get good. There have been too many good things said of the dust bath; it will not do a hundreth part of what it is recommended for; which same also may be said of sulphur. Sulphur has no place in the poultry yard; it possesses no economic value; lice will live and thrive in it, while if fed to growing chickens and ducks it is liable to cause a multitude of ills and ailments. But of lice again—a good hot white-wash is most excellent to rid the house of lice—but it must be hot.

EX-VICE-PRESIDENT MORTON'S BROILER FACTORY.

In course of a long article on ex-President Morton's farm at Ellerslie, on the Hudson, the *Country Gentleman* says:

"One more department at Ellerslie remains for notice—the broiler factory, so to speak—a group of buildings from which are marketed (under the direction of Mr. James H. Seely, formerly the leading operator in this line at Hammonton, N. J., which is noted as the home of the specialty) the immense number of 20,000 artificially incubated chickens per annum, the weekly hatch averaging 500. Ten incubators are kept running. About half the eggs put in, hatch out alive—some twenty per cent. of them being found clear and therefore infertile, on candling, about four days after starting; and three-fourths of the chicks go safely through the brooders, and are sold as broilers at eight to fourteen weeks from hatching, weighing then about a pound and a half. We were interested in the simplicity of the brooding arrangement. It consists merely of a pen, 5x15 feet, across which, near one end, run four-inch-and-a-half hot water pipes covered with a board and screened on each side by a flannel curtain. Forty-eight of these pens are arranged in an L-shaped building, 168 feet long one way and 108 feet the other; and as each pen accommodates a 100 extremely vivacious and voracious little chicks—which pass from pen to pen as they grow, the height of the top board of the brooder varying from four and one-half inches for the babies up to a foot for the graduating class—the animation of the scene may be imagined. We may add that it is intended to breed poultry largely, as well as to hatch it, keeping white breeds exclusively. It is thought that by crossing White Plymouth Rock cocks on White Minorca hens whose eggs are particularly large, white and attractive, a select trade in "fancy" eggs may readily be acquired.

DIRT AND FILTH.

There is a great difference between dirt and filth; good clean dirt is no objection in the poultry house, in fact it is a boon to the keeper and produces good results, but it is not so with filth. This is altogether a different thing. Clean dirt is a first class disinfectant and purifier, and so long as it is dry and friable, it is advantageous to have, but filth is not only dead and effete, but has a power of destroying all that comes within its action. The impurity from this filth is disastrous to the health of the fowls and they will soon become diseased if the house is neglected. Hence the importance of strict cleanliness at all times.—*Chum.*

CLEAN EGGS FOR MARKET.

Always wash the eggs that are not clean, and never allow any but fresh eggs to be sent to market. Sometimes the dirty looking eggs are fresher than some that are clean, but buyers will not believe it, and as they must judge an egg by its outward appearance only, the eggs should be made as attractive looking as possible.

HANDLING SITTING HENS.

To change a sitting hen let it be done at night, and have the new location as near like the one she previously occupied as possible. Leave her on the nest a few days until she is "firmly established" in her new quarters.

NO FREE ADS. FOR HIM.

Editor Branday, of the *Practical Poultryman* thus explains the uses to which he applies the waste basket, and his allusion to such things is timely. He says :

"The cheapest way of getting free ads. we know anything about is to send circulars to a poultry journal and have notices made of them. The circular usually costs one-fourth of a cent and the postage a cent more. Why hasn't Jacobs jumped on this scheme long ago? The *Poultryman* receives hundreds of sucb samples, but they quickly find their way into the waste basket. We are willing to notice our customers, but when it comes to noticing Tom, Dick and Harry indiscriminately, we must ask to be excused."

We will say for our good friend Branday that he must not expect us to do *all* of the protesting. The poultry journals take no notice of great things. They are very solicitous about the A. P. A., yet at the Charleston meeting several editors were there, and saw the meeting used to endorse the interests of one man for Superintendent of the poultry department of the World's Fair, and though the POULTRY KEEPER spoke right out on the matter the other editors kept themselves as close as clams, instead of exposing the political transaction.

HE SAYS IT IS BUNCOMB.

The editor of the *Fancier's Gazette* clipped an item from the POULTRY KEEPER and commented on the same in a brief manner. We present below the item and comment, as we desire to affirm the position taken by us:

"The man who will introduce a breed that lays more eggs than any other can snap his fingers at the Standard and Standard makers, for they will sell There is a wide field for an effort in that direction, and it will pay. We do not call attention to this matter to condemn what has been done but to show what may yet be performed. There is not enough new breeds as yet—of the right kind.—*Poultry Keeper*.

"The above is pure buncomb. True it is, that "a breed" that lays more eggs etc., would sell, but it would have to be a breed to do so. There are thousands of poultry men who now have a "standard" breed which lay remarkably well, and to equal or supercede them, no mongrel need try. It must be a separate breed, and before it gets there, it would get into the Standard:" —*Fancier's Gazette*.

The editor certainly misunderstood our language. Anyone reading the above can see at a glance that we advocated the introduction of a *breed*,—not mongrels. At no time have we ever defended the mongrel, nor have we ever stated that a new breed could be made in a day. On the contrary, we are advocating the expunging from the Standard of some of the already "quick-made" breeds, such as White Langshans, and we still affirm that "the man who will introduce a breed that will lay more eggs than any other can snap his fingers at the Standard, for they will sell." If such language is buncomb then we plead guilty, and will in the future use more buncomb.

Let the new standard recognize the fact that while the markings must be preserved more attention must be given *utility*. Take away the *real value* of the fowl and the business of the breeders will fall to the ground. Already close in-breeding for comb, wattles, legs, etc., has so injured some breeds that eggs do not hatch well. The Light Brahmas in the present standard, have only ten points for *breast and body*, while the *neck* alone has ten, the *comb* eight, with *legs* and *toes* six. It may be all right from a fancy point of view, but the man who buys a Brahma in the market prefers more breast and less beauty of comb.

The great mass of poultry raisers will not release their hold of the *practical* portion of the business. A few years ago nothing was mentioned in poultry journals about crosses. They catered to the requirements of *fancy* stock, forgetting that without the farmers and others that there could be no *buyers*. We saw that there was a wide field open for a journal devoted to both fancy and market fowls, although we were warned that the "field was full." But we went ahead, and the result was that we not only struck the "popular pulse," but benefitted every other poultry journal (which we are happy to say) and instituted the plan of *clubbing* among them, where before they never even mentioned each other. We aimed to give *practical information*, and did not care whether it was original or not, so our readers were pleased. The great demand for the utility breeds shows that the *utility* cannot be left out. The ornamental (truly fancy) breeds, such as the Polish, Silkies, Rumpless, etc., are not in as great demand as are the Plymouth Rocks, Wyandottes, Brahmas, etc., which make splendid market fowls, or for the Leghorns, and other hardy non-sitters and layers. We want a standard to specify the points of purity—nothing else—so far as plumage, comb, etc., is concerned, but where the greater share of the points go to the market qualities, and where birds for the show room are the same as those mated for breeding purposes.

AMERICAN BIRDS IN ENGLAND.

The Kyneton (England) *Observer*, of April 8th, has the following allusion to Partridge Cochins and Hamburgs brought from America. It is somewhat remarkable from the fact that England has always beaten us on Hamburgs, but in this case the American birds are highly praised. The *Observer* says :

"Messrs. R. and W. Dettmann, blacksmiths, of this town, are amateur breeders of fancy fowl, and their birds have frequently achieved high honors in show competitions. Some time ago the Messrs. Dettmann resolved upon importing some United States poultry, and selected the stock of C: Gammerdinger, a famous Ohio breeder, as that from which they import. The breeds chosen were Partridge Cochins and Silver Spangled Hamburgs. The Cochin hen unfortunately died at Adelaide, but the cock and the Hamburgs arrived in Kyneton on Thursday in excellent condition, evidencing that they had been well cared for on the long voyage. The Cochin cock is in Mr. R. Dettman's yard, and is penned in company with a fine hen from the yards of Mr. Steedman, of Williamstown. The cock is about eighteen months old, and is in the very perfection of condition. He is splendidly developed, well-hackeled, and with fine comb, and his plumage is as nearly perfect as possible. The Hamburgs are domiciled at Mr. W. Nettmann's in company with a fine young brood from eggs obtained from Mr. Robertson, of Pakenham. The Yankee birds are perfect specimens, clearly marked, and crowned with beautiful rose combs. The cock's tail has suffered in the coop, but Nature may be relied on to repair the damage. Poultry fanciers will derive pleasure from inspecting the birds, and we trust that the Messrs. Dettmann will achieve all the results they anticipate from their venture. Regarding the value of the birds, we are only able to say that they cost a "stiff figure."

It is quite creditable to Mr. Gammerdinger that his birds are received as mentioned above, and his numerous friends no doubt rejoice with him in his success. We feel proud to notice that American birds can hold their own in England, as the English breeders are among the best in the world.

"WIMMEN" AND CHICKENS.

The *Midland Poultry Journal* has joined the *Southern Fancier* in taking us to task for *protecting* the women. Here is what the *Journal* says in regard to our position:

"Brother Jacobs of the POULTRY KEEPER says his paper has no room to devote to rabbits, pigeons and such nonsense, and that it is a poultry paper. All right brother; but when you intimate that "all this talk about the chicken business and the running of incubators being a woman's work," gives you that tired feeling, we suggest that you take something for it this spring in the way of a trip to the West and see how many of the gentler sex are making a cackling success of the "chicken business." We are afraid that were it not for the assistance given the men in the poultry business by the "wimmen folks" they wouldn't tell of their howling success in type that talks loud."

We believe it not creditable to any man to put his wife at work *outside* of the house. It is true that her domestic duties may require her to work *inside*, but they will keep her busy if she is a neat housekeeper.

If any woman wishes to *play* with a few chickens there is no objection, but if a man conducts poultry raising as a business *he* should do the work. It is just as correct to ask the wife to curry the horses, or cut wood.

If the men out West, as stated above, could not mention of their "howling success" except by the aid given them by their wives in the chicken business, then we will exclaim, as the judge does to the culprit, "may the Lord in his infinite goodness have mercy on them."

FRESH AIR FOR HATCHING EGGS.

As bearing upon the important question of the need of fresh air when eggs are being hatched, the following extract from Dr. W. B. Carpenter's "Animal Physiology," first published fifty years ago, will be read with great interest. It shows the absolute need of fresh air, as we have so frequently pointed out in these columns :—

"The embryo, like the adult, has need of respiration—partly that its own heat may be kept up, and partly that the carbonic acid, liberated in the various processes of nutrition may be set free. Owing to the peculiar structure of the membrane covering the albumen and forming the basis of the shell, the outer air is enabled to gain access to the interior of the egg; and at first its action upon the blood, whilst circulating in the vascular area, is sufficient. In fishes no further provision is made for this process, since by the time it would be required the egg is hatched, the young animal comes forth into the medium it is permanently to inhabit, its own gills come into play, and the air contained in the water can act directly upon the blood circulating in the vascular area. But in the higher oviparous animals, whose development proceeds further before they leave the egg, a special provision is made for this purpose. A bag, termed the allantois, sprouts (as it were) from the lower end of the intestine and gradually enlarges passing round the embryo and beneath its enveloping membrane so as almost completely to enclose it. The surface of the bag is plentifully supplied with blood vessels from the embryo, and as one side of it lies in close proximity with the membrane of the shell it is very advantageously situated for receiving the influence of the air. It thus serves as the temporary respiratory apparatus of the chick up to the time when it is preparing to quit the egg. There is reason to believe that the bird then receives air into its lungs from the air space formerly mentioned, which increases in size as the contents of the egg diminish in bulk by the evaporation of their watery part. By the increased vigor which it thus acquires for extricating itself from its shell, which it does entirely by its own exertions. When it thus becomes independent of the allantois the circulation through the latter diminishes, and almost the whole sac is separated from the body by the concation of the connecting footstalk, which at last gives way."

In a foot note Dr. Carpenter adds : "If the respiration of the embryo be prevented by rendering the shell impermeable to air its development is completely checked."—*Poultry, England*.

SUMMER RESORTS.

Live fowls brought fourteen cents per pound in New York during the July warm days, and were still higher at the summer resorts. Spring chickens sold at twenty-five cents per pound for three-pound chicks, dressed. When getting ready for hatching next season, do not overlook the fact that there is a great demand for spring chickens and spring ducks at the summer resorts, and that the supply is not always equal to the demand. In New England the farmers have an excellent opportunity to raise chickens at good prices, but the great mistake made is in not aiming to produce the best in quality. It is true that New England produces as many choice fowls as any other section, but there is still a large field for improvement.

RAISING YOUNG TURKEYS.

The main points in raising young turkeys are to keep them dry, and to guard against lice. Not only the mites attack them, but also the large head-lice destroy them. Lice pass from the mother to the young. As soon as they are hatched, dust both the hen and young with fresh insect powder, and rub one drop of sweet oil on the heads. Do this once a week.

Young turkeys should be fed every two hours. They do not eat much at a time, but they eat often. Keep a small box of ground bone where they can reach it, and give water in vessels that will not permit them to get wet. Bear in mind the least dampness, to them, will be fatal.

Should they droop, look for lice. Nearly one-half the turkeys die from lice. Search closely on the skin of the head and neck of each, and use as a remedy one or two drops of sweet oil. Too much grease of any kind is injurious to them. Have the coops and runs clean.

Do not feed them until they are thirty-six hours old. Then give curds and stale bread, the bread being first dipped in fresh milk. Finely-chopped, hard-boiled eggs once a day may be given, and an egg, broken, and the contents well beaten into a gill of fresh milk, which may be warmed (not boiled), and thickened with bread, is excellent. Chopped onions may also be added to the mixture. Give them anything that they will eat. They are very dainty and will not accept all kinds of food. Wheat and cracked corn may also be kept before them.

Until they "shoot the red," which will be when they are ten or twelve weeks old, they will be tender, but after that time they will be hardy. They must be allowed to forage and help themselves. The good care at first, in keeping them dry and free from lice will bring the loss down to a minimum, and though it may be tedious work, yet nothing pays better than a good crop of turkeys.—*Farm and Fireside*.

TURPENTINE FOR ROUP.

Experiments made show that the germs of roup are destroyed when brought in contact with spirits of turpentine. Turpentine, however, is a severe dose to give, even if effectual, and if too much is given, it may do damage of itself. To properly prepare it, mix one part of spirits of turpentine, one part kerosene and three parts glycerine in a sewing-machine oil can, and always shake well before using. With the point of the oil can force three drops of the mixture in each nostril, and five or six drops down the throat of the fowl twice a day. Roup is a disease that is almost incurable, being contagious, and gradually exhausts the bird instead of causing instant death. If it appears in the entire flock, the labor of handling the sick birds is often more than the value of the flock, and as roup cannot well be treated on the wholesale plan (that is, without handling the fowl), it is cheaper to clean them out, burn the carcasses, thoroughly disinfect, and begin anew. The building should be very warm and dry.

GROUND BONE FOR FOOD.

Ground bone contains not only lime, and phosphoric acid but quite a proportion of nitrogen, contributing, therefore, to the growth of young stock, and also material for the production of eggs. Ground bone will easily take the place of oyster shells and considering its greater value is proportionately as cheap. If fed fresh they are more valuable than when the gelatine and other matter have been partially lost. If burned the nitrogen is carried off, but the bones will be equally as valuable so far as the lime and phosphoric acid are concerned. We would advise all our readers to feed ground bone, a tablespoonful once a day in the soft food of ten hens is a ply sufficient.

DRY OR WET FOOD.

Wet, sloppy food is distasteful to fowls. They prefer all their food dry, but there are occasions when it is not convenient to give all the food in a dry condition. It is better to make the soft food as stiff and crumbly as possible. But for the fine condition of ground grain there would be no necessity for dampening it at all, but as it is this cannot be avoided. We can safely say however that wet food should never be thrown on the ground, and, in cold weather, too much should not be given at once, but rather feed a little at a time, so that the birds can eat it warm.

POULTRY AS A FARM SPECIALTY.

Fowls will pay well on the farm if you will care for them and give them the little attention they require. In the first place you need a person to attend to them, one who will not allow dumb animals under his care to suffer and who is willing to be tied down a little, for the fowls need to be fed regularly, writes F. E. Dawley in *Fanciers' Review*. Select some member of the family who is in sympathy with the poultry and who will take pride in seeing them thrive under his or her care.

Next you want a place to keep them in; for this, I would recommend a building separate from the regular farm buildings, placed in a sheltered, sunny spot, well drained, in a corner of the orchard if not too far from the house. The size must vary according to the number of fowls to be kept, and the space or funds available, but no matter how you build, you must keep certain things in view from the beginning.

You want warmth, dryness, ample space, good ventilation, and simplicity of the inside arrangements that they may be easily cleaned and kept free from lice. In my own experience I have found that the hens will lay more eggs if they are divided into pens of not more than ten or twelve and in building would make the house sixteen feet wide and twelve feet long for each twelve hens to be housed; this allows for a four foot alley on the north side of the building. I have found that a house made with a good solid balloon frame with matched or novelty siding on the outside, with tarred paper between the boards and studs and on the inside another thickness of tarred paper, this covered with matched ceiling is the cheaper in the end.

For the roof I use what are known as clear butt shingles and for the inside partitions planed hemlock boards for the first three feet from the floor, and two-inch mesh wire netting from that up to the roof. In the south side put a twelve light window for each eight feet in length. Make the posts six feet high so that there will be no bumping of heads in passing about inside. I would make the nests and roosts movable so that in cleaning they can be taken outside of the house if wished. Provision should be made for saving the droppings, as they are worth about one-third as much per ton as the average commercial fertilizer.

One of the best methods of handling them is to make a tight shelf or scaffold under the roosts and about twice a week sprinkle the droppings with common field plaster, which will change the ammonia in them into sulphate of ammonia which is the best possible form of this valuable fertilizing element. I clean these platforms about once in two weeks, packing the mixture firmly in tight barrels and storing it in a dry place until spring, when I mix it with wood ashes for use on sweet corn, garden truck and fruit. This mixture should be used as soon as prepared. The manure as I take it from the platforms analyzes about 2.22 per cent of ammonia, 2.12 per cent phosphoric acid, 1.11 per cent potash and by adding potash I get it fairly well balanced for plant food. The analysis of the droppings will vary somewhat under different methods of feeding and care. The food has much to do with profit in poultry raising and the great reason why fowls are no more profitable as usually kept on farms is that too little attention is paid to it.

One must be governed by his markets; if his markets call for eggs, grow eggs. If your customers want brown shells give them brown shells and if they have the idea that the white shelled are the richer, give them white shells; its just as easy one way as the other. If they want broilers, procure some of the larger, quick maturing birds and give them broilers.

As a rule I think there is more profit in egg production than in breeding for flesh, unless you are raising early spring broilers. With proper care and feed, one can increase the number of eggs to a great extent. Hens cannot lay or produce eggs unless their food contains the elements of which the egg is composed. That is, a large proportion of albuminous or egg producing elements. In addition to the quantity of albumen required in the organism of the fowl, the laying hen requires more for the white of an egg, it being about twelve per cent albumen, and this must be furnished in her feed.

By making a chemical analysis of the different grains, you will find that wheat contains a larger amount of albumen than any other grain. Therefore it is the right grain to use in a basis for egg ration. It is too expensive, however, to use wholly. The other important items are, when the fowls do not have a large field to range in, to give them once a day, if possible, a feed of chopped clover hay, they need this for the bulk, but it is rich in nitrogen which enters very largely into the formation of the egg. They also need meat at least three times a week. I like the cut raw bone and meat together best, some green food is also needed every day. Chickens are like the human family in one respect at least, for they relish a change of food. If you take fowls that have been fed on one kind of grain for some time, and do not have the appetite that they should have, give them a little cooked food, such as cake made from coarse corn meal and meat scraps baked together, or else some grain other than you have been feeding, and you will see that they will eat it ravenously.

While wheat is one of the best feeds for producing eggs, it is of little value for fattening purposes, compared with corn, as corn contains a great deal of carbonaceous or fat forming matter, which puts on flesh in a very short time. Pure water is also very essential to laying fowls.

You will probably think I am exaggerating when I tell you that there is nearly as much water in a pound of eggs as in a pint of milk.

Let us tear an egg apart with the chemists' weapons. Here we have about two and one-half ounces of matter, sixty-seven per cent of which is water; ten per cent or one-quarter ounce of lime (where are you going to get that when you only feed corn, brother farmer) twelve per cent albumen, nine per cent fat; and one per cent ash. There is also a small quantity of sulphur, phosphorous, magnesia and several other bases which are found in various combinations.

You cannot make something out of nothing, neither can the hen; she cannot elaborate an egg out of a starchy grain and patent egg food nor can she put a shell on it unless she has given the lime to make it from. The progressive breeder of poultry long ago found this out and are feeding such foods as contain not only carbohydrates, or starch, fat and sugar, such as meat, bone, clover hay, linseed meal and wheat bran.

No given rule can be laid down as to the amount to feed, you must judge for yourself by experiment on your own flock. I cannot tell how well they are housed and protected. If they roost out in trees you should give them plenty of corn to keep them warm, and give up expecting eggs, until the warm spring days come; but if you have housed them properly and feed them right remembering that neither fat hens or cold hens will lay many eggs you will be rewarded.

Now I want to impress upon you one thing. I told you that an egg contains sixty-seven per cent of water; how many of you are compelling your hens to melt snow to get it? Besides this sixty-seven per cent the hen requires almost as much more to complete her bodily economy. How many of you give it to yours? Now don't feed your hens corn, red pepper and snow and howl because they don't lay. Turn over a new leaf. The poultry business is a good one if you will conduct it properly and give the hens fair play. They do not ask for any credit they pay as they go, and to those who like fowls, is opened a profitable branch of agriculture.

Do not go into it too heavily. Start in with what fowls you now have on the farm keep an account with them; ten to one they are paying now, and will pay better the coming year. When you have learned to make these pay, keep more pullets over and so let the business grow. If you find they are not paying reduce the flock and study to see where the trouble is.

Many who keep one hundred fowls cannot make them pay as much per head as they could if they only kept fifty. Don't put two many in too small a place, feed properly, water often, house warmly, cater to your local market and poultry will pay.

GOT THINGS FEARFULLY MIXED.

Mr. M. F. Clemens, Jr., in the *Ohio Poultry Journal*, in discussing extremes, condemns the advice given by us in regard to ventilation, but we fear that Mr. Clemens has not read our remarks carefully, as he certainly places us in a position which we have never assumed. He says:

One extreme is generally about as bad as another. Bro. Jacobs of the *Poultry Keeper* has been so thoroughly convinced that poultrymen are giving their fowls too much ventilation that he promptly flies to the other extreme and gives them *no ventilation* at all, and contends profusely for his theory in the columns of his journal. Why *no ventilation* will act any more favorably with fowls than with man and other animals he does not explain scientifically. He simply puts forth his edict to the effect that henceforth and forever poultry houses should have no ventilation whatever.

I will admit that nearly all farm poultry houses are composed more of ventilating facilities than anything else, and, for argument's sake, that many fanciers furnish too much ventilation in cold weather, and often furnish it in a way to cause draughts and consequent colds; but the misuse of a "good thing" is proverbial. Ventilation is a "good thing" for man or beast—it is a necessity. Without it, diseases of the throat and lungs are more readily developed in man. The only cure for consumption, physicians acknowledge, is pure air, out-door life and correct living—above all, *pure air*.

It has been conclusively shown that fowls having free run of a farm and roosting in trees or open sheds seldom have roup or consumption, while fowls roosting in tight, warm houses will catch cold readily when exposed to the damp out-door air. This is not an argument for slip-shod methods in poultry keeping; but of two extremes—air-tight houses or trees—give us trees. The rational method is between the two extremes—namely, a warm, well ventilated house, that can be opened out wide for admission of pure air in summer, and properly adjusted for warmth and good air in winter. A ventilator should be so constructed that a draught is impossible.

An old stovepipe provided with a damper makes a good poultry house ventilator. On a very cold day the damper may be nearly closed; in medium weather it may be opened. In summer every poultry house should be provided with a slat or wire netting door admitting air freely. Ventilators so placed as to cause draughts are worse than nothing and do absolute harm. If the brother's crusade was against this type of ventilation only, I would have no issue with him. Air tight poultry houses mean foul air; foul air means roup; roup means death or lingering consumption. I have seen many a fowl apparently recover from roup, but never of any value thereafter. It is impossible to fatten them; they have no stamina, and do not lay. If you have such a fowl in your yard and are at a loss to know the trouble, examine for lice, and if free of lice you may set it down as a case of consumption. They will often live a long time in this condition. The hatchet is the remedy."

We have never yet advocated *no ventilation*, but simply affirmed that in *winter* the *ventilator*, by causing draughts, killed the birds, and that no poultry house, as usually constructed, needed ventilation. We know the importance of fresh air, but *how* to get it without draught is a problem not solved, even by the stovepipe method mentioned above.

All fresh-air-men generally wind up by advocating the *tree tops*, and Mr. Clemens seems to have gotten there too. It is true that *some* birds *do* roost in the tree tops, and exist. So do wild birds. The dead ones are never counted, but the eggs laid by the few survivors can be counted on the fingers.

It is not necessary to be in the *wind* to find pure air. A barrel can be emptied through a spigot as well as by turning it over. A poultry house can be full of pure fresh air without the wind blowing through it. Nobody stands in a draught to cure consumption.

The point we wish to make is that in winter nearly all poultry houses *are* ventilated, and that it is not an easy matter to create foul or impure air in them even if it was so desired.

We understand the position taken by Mr. Clemens, but we are sure that he does not understand our views on ventilation.

GOING INTO THE POULTRY BUSINESS.

How many houses, and how should they be built? A subscriber at Chicago wishes to try the poultry business, as much for his health as for any other purpose, and he wishes to know more about it. In a letter to us he says:

"I am very much interested in the poultry business, and would be very much pleased if you could give me some information to start on a larger scale so as to make it pay. At present time I keep about sixty hens, Plymouth Rocks, here in the city, but on account of not feeling well in health I had to give up my trade (clothing cutting) and want to move out from the city of Chicago, about twelve to thirty-eight miles, so I could go into the poultry business on a larger scale, and improve my health also. I do not expect to make a profit the first year. All I want is to get a good start, and get a good cheap plan for the houses. In your last issue of the POULTRY KEEPER, on page 27, under the name of "Getting Rich on Poultry," there is a plan for a fifteen acre poultry farm, which should be divided into two fields, one of five acres and one of ten acres. What I would like to know is how many houses I must have to keep 300 hens. There it says only seven houses, each four by eight feet. Will that do? And how about having all the hens on five acres? Must it be fenced?"

It is plain that our friend does not know anything of keeping hens on a large scale, but he says he is not expecting anything the first year.

We could not describe a house here unless we illustrated it. Our April, 1887, October, 1888, and July, 1891, has about fifty plans. The kind of a house depends on how full the pocket-book is. No plan will suit each and all.

A flock of a dozen hens should have a house about ten by ten feet. No flock should be larger than fifty hens. A house ten by one hundred feet may be divided into four or more apartments. Allow one hen for each foot on the front of the house, or one hundred hens for one hundred feet length of house.

Five hundred hens can be kept on five acres. How to do it depends on the "lay of the land." The point is to guard against diseases.

It is better to begin with a few—not over one hundred hens—and increase each year, so as to gain experience. We do not advise any inexperienced person to give up a position for the poultry business.

Going into the business for *health* is where mistakes are made. The raising of poultry in large numbers is a *business* requiring hard work and capital. One not fitted for it can lose his money, and his health, too, but he can succeed by beginning at the bottom and *learning how* to manage, as it cannot well be given on paper.

THE LEGHORNS ARE SITTING, TOO.

Mr. "Miller Purvis" has written us a second letter in regard to sitting hens, and as we have discussed his former letter in another article, we present the following:

"I write to say that I have overdone the thing with my Leghorns, and two of them have gone to sitting. They are pure, I know, for I have been very careful of my stock for twelve years. Funny, isn't it, that my Light Brahmas are laying right along and some of my Leghorns are sitting? The Leghorns that are sitting are only two years old, and this is the first time I have ever had one under three years to sit. I have been giving thirty-three of them about four quarts of wheat every day, and they have free range. I gave them a little corn occasionally, about once a day, but I thought I would try wheat once. They have all the milk they can drink. It was no doubt the wheat that did it."

So it is seen that Leghorns are sitting and the Brahmas are laying. Mr. Purvis is trying the effects of food on the propensity to sit. He is making the non-sitters go on the nest and keeping the Brahmas at work in producing eggs. It is all done by the food. We hope to have more on the subject from Mr. Purvis.

SOAPSUDS AND LICE.

There are times when soapsuds are plentiful, especially on wash-days, and as it will do no harm in the summer to drench the poultry-house, and as lice should be fought from the beginning of mild weather, no better use can be made of the suds than to use them for destroying lice. If you have a sprayer, so much the better, but if not, you may use a watering-pot with a rose nozzle. The soapsuds will be all the better if you have them very strong. It is a good plan to dissolve a pound of concentrated lye in a tub of suds. Apply the suds hot if you can, but apply them at all events hot or cold. Do not miss a single square inch of surface. Do it on a dry, warm day. Saturate the floor, walls, roosts, and even the roof, and have it get into every crack and crevice. Remove the nest boxes, saturate the boxes, let them dry, and add new material. When the house is dry, sprinkle every portion with fine, air-slaked lime. If you will follow these directions, the lice will be easily kept in check.—*Farm and Fireside*.

FEEDING ON THE GROUND.

The supposition that the more dirt a hen eats with her food the better has been entirely dispelled in this age of progress, as cleanliness in feeding is very necessary to prevent cholera in adults and gapes in chicks; and, as the ground is frozen in winter, the food becomes very cold before the hens can eat it, if it is soft. A plain board, or a small trough, will not only be better, but the hens will learn to know its use and approach for their food at certain hours.

COLOR AS A MARKET QUALITY.

Color plays an important part in the poultry business. Dark eggs are sometimes preferred in market, while yellow legs and skin are much in favor with buyers. A black fowl has black pin feathers when young, and requires a longer time for dressing it. White is now becoming the popular color, as it is easier to breed white fowls uniformly than others, while the color of the legs and skin is usually yellow.

HOW MUCH CAPITAL.

It takes money to do business. If one wishes to keep a few hens in a back yard but little expense is required, but, as the *Mirror* remarks, a large business cannot be done with a small sum. This applies to any and all branches of industry, and is a law that cannot be evaded. Many persons of limited means, who see no opportunities elsewhere, resort to poultry raising as presenting an easier and safer opening; but the failures are more numerous than the successes. This is due to underestimating the amount necessary for success, and the fact that, like other industries, one must wait until the returns come in, which is a difficult matter with those who have but little capital and who have their all invested in their business.

Quite a large flock is required to pay $1,000 a year. There is seldom over a dollar per hen clear profit, hence a thousand hens must be kept, in order to realize the amount named. Then there is the land and buildings, the cost of which, with the fencing, would be at least, $1,000, all of which would be fixed capital. The food must be purchased as wanted, and many other incidental expenses will be met with that cannot well be estimated in advance, all of which would necessitate a working capital before any steps could be taken.

The hens must be procured, and cannot be purchased for less than fifty cents each; or they must be hatched and raised, which is the only sure way to success, as the purchase of stock would bring in disease, lice and worthless birds. This of course takes time, and nearly a whole year is thus lost in getting ready. In the mean time the poultryman's family must be provided for and his other expenses met. Another item, and the most important of all, is the labor. No matter whether the work is done by the owner or by hired help, it must be paid for.

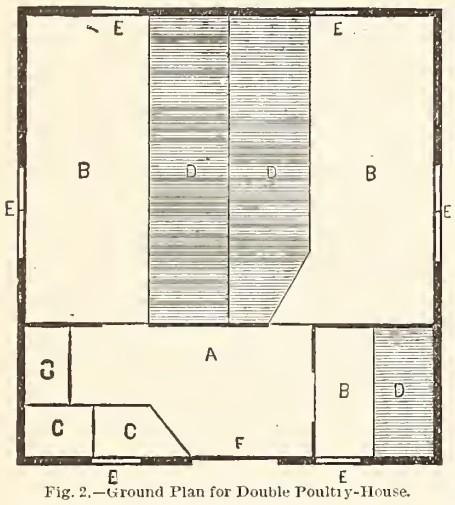


Fig. 2.—Ground Plan for Double Poultry-House.

It is not intended to discourage anyone from entering into the poultry business, but to caution against loss. It is not wise to engage in any business unless prepared, and experience is also essential. One could not engage in any other business on insufficient capital. It is only after loss of time and labor that a business becomes established, and although it requires capital to keep large flocks, yet the poultry business, with good management, will probably give better returns than many other enterprises and with plenty of capital, success is not difficult.

SAVE THIS FOR LICE.

Director Menke (Arkansas, Bulletin 15) reports a new insecticide—or a new combination—which promises well. It is the kerosene extract of pyrethrum. One and one-half gallons of kerosene was soaked through two and one-half pounds of pyrethrum, resulting in a yellowish, oily extract which will not mix with water, but which will form an emulsion with soap similar to kerosene emulsions. One pound of soap dissolved in one gallon of boiling water added to one gallon of the extract, well mixed or churned with a force-pump, made a perfect emulsion which, when diluted—one part of emulsion to 450 parts of water—readily killed cotton worms. It seems to combine the properties of kerosene and pyrethrum, and to be more effective than either, easier to handle and cheaper. It will be well for horticulturists to try this extract, as it is very easily prepared. Prof. Menke also experimented with veratrine, which, when mixed one part to sixty-four of flour, was rather more effective than the usual strength of Paris green. Veratrine is obtained from the root of hellebore and from sabadilla seeds. It is a white, crystalline powder, having an acrid, burning taste. It is used in ointments for the treatment of neuralgia or rheumatism. The supply at present is limited.

THE TENNESSEE BREEDERS.

The gentleman interested in breeding fine poultry met as per announcement at courthouse (Knoxville, Tenn.), and effected permanent organization. The meeting was attended by a greater number than on the former occasion and a deep interest was manifested.

Chairman Bell called the meeting to order, and the committee on by-laws being ready to report, the same were read and adopted. It was decided to name the organization the East Tennessee Poultry Association.

Nominations were then made for President. The names of H. N. Camp, R. H. Bell and A. G. Howe were presented, and R. H. Bell was selected President. Dr. Fenoimore was elected Vice-President, John W. Flennikeu, Secretary, and W. L. Trent, Treasurer. The Executive Committee is composed of E. F. Mynatt, Chairman; A. G. Howe, E. M. Boyle, H. N. Camp, all of Knoxville and D. M. Owens, Athens.

It was decided to hold regular meetings the first Monday of every month. It was also decided to hold a poultry exhibit sometime next fall.

Mr. Owens, of Athens, who was present, is a famous poultryman, probably the most extensive in the business in the State. He gave some very timely advice and is in hearty sympathy with the work of the Association.

Correspondence was read from others in different parts of East Tennessee, expressing regret at not being able to be present but assuring the association of their hearty, co-operation.

PIEDMONT POULTRY ASSOCIATION.

The Piedmont Poultry and Pet Stock Association was formed last week. The officers elected are as follows: S. T. Lea, of Cokesbury, President; W. M. Norwood, of Greenville, First Vice President; L. C. Boland, of Prosperity, Second Vice President; A. S. Briggs, of Summerton, Third Vice President; R. Y. Hellams, of Greenville, Secretary and Treasurer; W. A. Yates, Assistant Secretary and Treasurer The Executive Committee is composed of Messrs. J. K. Felton, R. L. R. Bentz, A. W. Anderson, Greenville; T. A. Irwin, Spartansburg; E. C. Conner, Cokesbury; J. H. Mounce, Pendleton; Dr. W. C. Irby, Laurens; J. L. Jolly, Denver, and S. J. McCanghrin, Newberry.

Much interest was manifested by those present, all of whom joined the organization, and besides paying the membership fee, made pledges, payable in October, of various amounts, for the purposes of the Association. The annual membership fee was fixed at one dollar, and all fanciers desiring to enter the organization are requested to give their name and fee to the Secretary and to say how far they can otherwise aid the work.

The Association expects to hold a poultry show in Greenville sometime next January.

AN ADMONITION.

Be careful in feeding. The cause of disease and lack of eggs is overfeeding, especially in summer. But little food is required by the hens from the farmer, and there is a liability of making them too fat when they are not left to their own exertions when they have the freedom of a large range.

SUMMER GREEN FOOD.

For fowls not at liberty, the mowings of the lawn, cabbage leaves, turnip tops, cut clover or any green food that is easily obtained, will satisfy them, but it is best to have all green food cut fine for them. A good mess once a day will be all that is necessary.

Low Prices.—Eggs in small or large quantities, also stock. S. C. W. Legs. and W. Wyans., Knapp St., cross b'ds for br'ls. B. R. Moxon, Elm St, Ithaca, N. Y

Buff Legs., Bu P. Rks., L. Gms., Bl. Mins., P. Rks. Eggs $2. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Will sacrifice 35 Pekin Ducks, 10 Drakes, 5 Indian Game Cockerels, 2 Pineland Incus., 2 Pineland Brooders. F. H. Walker, 157 Broadway, N. Y.

SINGLE COMB WHITE LEGHORNS.
Fifty grand breeders for sale cheap, score card with every bird; must go, who wants them.
W. W. COLE, LeRoy, Genesee Co., N. Y.

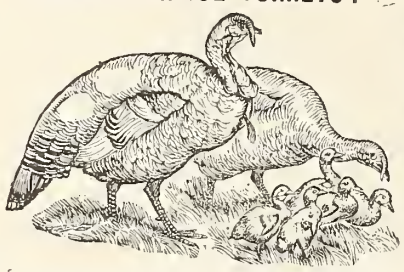
EUREKA INCUBATOR for sale, 300 egg size, nearly new, copper tanks, clock for turning eggs, for only $45.00, cost $82.00.
JOS. D. WILSON, ROSEMONT, N. J.

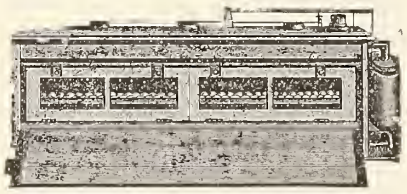
THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

IS YOUR POULTRY PROFITABLE.
The water they drink fresh and pure.
The hens' nests free from lice.
Your answer would be yes if you used the
Dandy Fountain For Poultry & WIRE HENS NESTS.
Send $3.75 and get one 2½ gal. size Dandy Fountain and one dozen Wire Hens' Nests, or enclose stamp for Cir. A 200 egg size Incu. free to the first $10 order. Address, LEE GROVER, MARENGO, Illinois.

HATCH CHICKENS BY STEAM
With the Improved Excelsior Incubator.

Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made.
Circulars free. Send 6c. for Illus. Catalogue.
GEO. H. STAHL, Quincy, Ill.

HOW TO RAISE TURKEYS!

The numerous diseases that are usually prevalent among very Young Turkeys, may be prevented by the use of
CARY'S PILLS.
Send for Circular.
E. FOUGERA & CO.,
30 North William Street, New York.

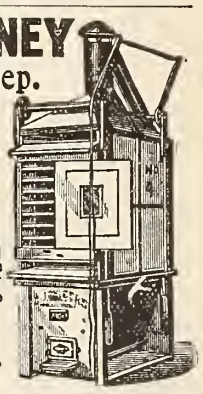

Won at Madison Square Garden, 1892. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.
THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.
Jas. Rankin, South Easton, Mass.

KNAPP BROS.
ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD
WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.
Proof—The records at 29 of the leading shows during the past ten years—Highest Honors every time. We sell annually hundreds of Exhibition and Breeding birds but never at any price, our best tested breeding stock, $100 in one order at a recent sale, for 18 show birds. OUR MATINGS for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce sure winners and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. 100 fine breeding Cockerels, separate or mated up in pairs, trios or breeding pens to suit customers, at reasonable prices for quality. EGGS for HATCHING from our choicest matings, at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address
KNAPP BROTHERS,
BOX 501, FABIUS, N. Y.

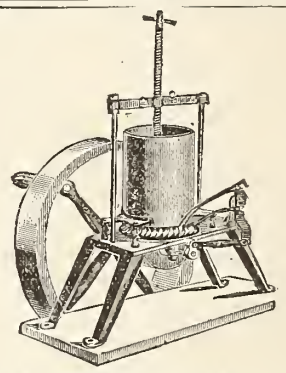
Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

INCUBATOR NEW MONITOR, CHEAP. C. B. WARD, Huntington, N. Y

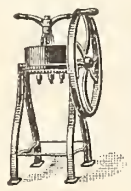
THE GREAT AMERICAN TEA COMPANY
A PRACTICAL EVERYDAY COOK BOOK FREE containing over 2,500 tested recipes. 320 pages, bound in cloth. Don't fail to get the WATCH-CLOCK, the greatest novelty of the age. For full particulars address The GREAT AMERICAN TEA CO., P. O. Box 287. New York City, N. Y.

MAKE MONEY While You Sleep.
STAHL'S EXCELSIOR FRUIT DRIER

Evaporates Fruit DAY and NIGHT. Catalogue free upon application.
Address
WILLIAM STAHL EVAPORATOR COMP'Y, QUINCY, ILL.

We are So Anxious
That you should see our new circular on
Poultry Supplies.
It illustrates the most complete line ever offered.
FREE
Johnson & Stokes,
—SEEDSMEN—
217 & 219 Market St., Phila., Pa.


Hundreds of these Bone Cutters sold and sales increasing.
WHY—They are sold at a reasonable price. It cuts all Green Bones fine enough for small chicks. It cuts clear meat, vegetables to perfection. It has an automatic feed. It takes in a large bone 4x6 inches. It is warranted for one year by hand or power. If you can break any part by actual use we furnish such parts free, during this time. It goes at a low rate of freight as cutters are all crated. Knives and cutter-head all one solid piece of chilled steel. Do not buy a Bone Cutter until you get our price. Valuable testimonials, etc. We will furnish you a superior cutter at a price you can afford to pay.
Our cutter was entered at Rochester, N. Y., for exhibition and was very highly commended. It was not entered in time for a premium and therefore did not compete for a premium. Get our circular, which shows you good men's opinion on this cutter, by actual use.
WEBSTER & HANNUM,
Cazenovia, N. Y.

"Everything For The Poultry Yard."
Poultry and Supplies
MOST COMPLETE STOCK IN AMERICA.
PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.
Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.
Do You Want Our Catalogue?
60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.
MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.


MANN'S CELEBRATED BONE CUTTERS.
Awarded 1st and 2d prizes at both Rochester (Fair) and Madison Square Garden (Poultry Show) over all other exhibitors. No other bone cutter ever yet received even a 2d prize in competition with it. Four Silver and Bronze Medals, eight Diplomas and ten First prizes received. Forty-eight editors of such papers as Farm Poultry, Poultry Keeper, etc., etc., endorse it. Its superiority is unquestioned. Stamp for Illustrated Catalogue, free if this paper is mentioned.
F. W. MANN CO.,
MILFORD, MASSACHUSETTS.

EGGS. Langshans, Minorcas, and Auconas, $2.00 per 15; $5.00 per 45.
IND. GAMES, $4.00 per 15. $7.00 per 30.
BUFF LEGHORNS, $5.00 per 15. $9.00 per 30.
BIRDS, Single, $3.00 to 10.00; Pair, $5.00 to $15.00; Trio, $7.00 to $25.00.
Send 4 cents in stamps for Illustrated Catalogue.

C. C. CERTAIN CURE For Cholera, Roup, and other diseases of poultry 50c. per lb. 5 lbs for $2.

C. F. CHICK FEED Is invaluable for young and growing chicks. $3 ₱ 50 lbs. $5 ₱ 100 lbs.

S. S. SURE SHOT Is death to Chicken Lice and all insect life 25c per lb. 5 lbs for $1.

Sent by freight or express on receipt of price. (*Sixteen cents extra per pound if sent by mail.*) We ask you to give these preparations a fair trial, and be convinced of their superior merit. Every poultryman should send two cent stamp for circular giving particulars.

F. A. MORTIMER,
Pottsville, Penna.

ST. BERNARDS.
(CHOICE STRAINS.)
PUPS FOR SALE.
Send stamp for circular giving full particulars.
MALES, $20.00 to $50.00.
FEMALES, $15.00 to $35.00.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the **best** W. Leghorns, L. Brahmas and W. P. Rocks.

EGGS from prize winning B. Turkeys. Jos. W. Fleming, Buckingham, Ill. Stock after Sept.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm H. Van Doren, Buckingham, Ill.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

GET THE BEST. My White Turkeys have won every 1st prize at N. Y. and Phila., '92 and '93. Eggs, $5 per 13. D. A. Mount, Princes Bay, N. Y.

WHITE FOWLS, Prize winners, 92 to 97. Eggs. W. Cochins, $2.50; W. C. W. Polish, $2; S. C. W. Legs., $1.50. Cir. free. Geo. A. Friedrichs, Erie, Pa.

Prize winning S. and W. Wyans., I. Game and P Ducks. Stock and eggs for sale, send for Cir. **M. H. LEIDY, Blooming Glen, Pa.**

PIT GAMES ONLY, ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

BEATTY'S PIANOS and **ORGANS** $33 up. Want agt. Cat'lg. **free.** Address DANIEL F. BEATTY, Washington, N. J.

ROSE COMB BROWN LEGHORNS a specialty, also B. P. Rocks. Eggs $1.50 per 15, $2.50 per 30. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Rayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

PREPAID, 15 EGGS S. C. Br. Leghorns, B. P. Rocks, **$1.75 $2.00** Other varieties Circular free. Lock Box 198. **J. D. BRUBAKER, Sidney, Neb.**

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. **D. M POLING, Van Wert, Ohio.**

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P. O. Goochland Co., Virginia.**

SPANISH 29 years. **J. BENNETT, Sunman, Ind.** Circular and my photo free.

FISH-SCALE JEWELRY. Elegant, artistic and durable. For price list send to MRS. W. T CATHCART, WASHINGTON, D. C., 516 3d STREET, N. W. AGENTS WANTED.

The Cream of the Earth! R. C. B. Legs., B. P. Rks, Sil. Wyans., Pk Bant. Nothing but high scoring birds in our breeding pens! Eggs and Stock in season. Cir. Clarence L. Smith, Loveland, Colo.

I am in no way connected with the **ELK ISLAND POULTRY CO. of ISLAND, VA.** My yards are situated on a 100 acre farm, four miles from Richmond, Va., on the R. F. & P. R. R. Therefore, please address me, **B. A. FOX, Richmond, Va.**

Send 50 cents to **Hetrick Bros.** Indiana, Pa. for best instrument for curing Gapes. Best discovered, simple and sure. Agents wanted. Wetricks sure cure for chicken cholera, 25 cts. by mail.

40 acre Fruit and Poultry Farm for sale. Six roomed house, barn, four incubators, hot water brooder, 2,000 capacity, and eight fowl houses. Price, $2,200. Address, Susan Reed, Hammonton, N. J.

BUFF WYANDOTTES. PLYMOUTH ROCKS. EGGS $5.00 for 13, from prize winning birds, while getting, get the best **J. D. WILSON, Worcester, N. Y.**

BUY THE BEST.
The Improved Monitor Incubator. Hundreds of Testimonials **from all parts of the world** as to its merits over all other makes. Large book with cuts for stamp. Address **A. F. Williams,** Bristol, Conn.

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE
WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.

PRINCES BAY POULTRY FARM, D. A. MOUNT, Mgr., Princes Bay, N. Y. Ind. Games P. Rocks, W. Wyans. L. Brahmas, Mam. Pekin Ducks, W. Turkeys and W. Guineas. 14 entries at N. Y. and Phila. '92 won 8 1st prizes; 24 entries '93, 10 first and 6 seconds. Stock and eggs for sale. Cir.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.00, postpaid. They make handsome and valuable books.
Address **Poultry Keeper Co.,** Parkesburg, Pa

BOOM THE LEADERS!

The two best poultry papers on earth are
FARM POULTRY ..... **50 cts.**
and
POULTRY KEEPER ..... **50 cts.**
We will send both, for one year, for **only 70 cts.**
I. S. JOHNSON & CO.,
Boston, Mass.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any Incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass.**

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock. Exhibition birds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pfiddlimmon strains. P. H Jacobs, Hammonton, N. J.

W. & B. MINORCAS. Fine exhibition birds and first-class breeding stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. **G. W. PRESSEY, Hammonton, N. J.**

LOOK HERE. If you want eggs of good stock at low prices, write to **A. F. KIMMEL,** Orwigsburg, Pa., Prop. of The Orwigsburg Poultry and Stock Farm. Cornish Indian Games and all leading varieties. Honest dealing my motto.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. E. Brabazon, Delavin, Wis

ARNOLD'S BUFF LEGHORNS are the finest collection on earth, and you will miss it if you order eggs or stock before sending a 2 cent stamp for our new catalogue containing colored plate of Buff Leghorns, and the grandest lot of testimonials ever seen. Eggs $3.00, $5.00 and $10.00 per 13. Address **A. D. ARNOLD, Dillsburg, Pa.**

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS.** Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa.

Indian Games, S. C. B Leghorns, B. Astrachans. Eggs in sea. Cir. W. A. Williams, Rome City, Ind.

MAPLE FARM DUCK YARDS.
The Largest Duck Farm in America
Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices **JAMES RANKIN, South Easton, Mass.**

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN** and **WHITE LEGHORNS, BLACK, BUFF** and **PARTRIDGE COCHIN.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

INDIAN GAMES. Buff and Barred Plymouth Rocks, S. C. B. Leghorns. At Philadelphia, Feb. 17-22, we won on Indian Games, 5th Cock, 5th Hen, 2d and 3d Cockerels, 1st and 2d Pullets, 1st breeding pen. On Buff P. Rocks, 2d Cockerel, 1st and 2d Pullets. Choice breeding stock for sale. Eggs for hatching. Write for prices. **G. M. WOODS & BRO., Leaman Place, Pa.**

CHOICE STOCK FOR SALE
after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH. Utica, N. Y.**

FOR SALE. Eggs from high-scoring birds, S. S. Hamburgs, W. P. Rocks, 2.00 per setting, Buff Leghorns "that are buff" from imported stock, $2.50 per setting. B. Turkeys, $3.00 per setting. I handle only the best birds that can be obtained for breeding. Birds hatched from my eggs when raised can hold their own in the best company. Address **MRS. A. M. HALLOCK. Columbus O.**

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes,** Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.,** by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

ST. BERNARDS AT STUD.
Ch. Scottish Leader fee $10; Eboracum, fee $40; King Regent, fee $25.
COCKER SPANIELS AT STUD.
Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free.
SWISS MOUNTAIN KENNELS,
Germantown, Philadelphia, Pa.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,
ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 Inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.10 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ Inch Galvanized Staples, 10 cents per pound, Discount 5 rolls 5 per cent, 10 rolls 10 per cent.
PETER DURYEE & CO., 215 Greenwich St., N. Y.
SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. **Extra Heavy** Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Caps and Nails. Sample and circular free.
A. F. SWAN, 38 Dey St., N. Y.

OUR CATALOGUE FREE
POULTRY SUPPLIES
HARVEY SEED CO. BUFFALO N.Y.

The Prairie State Incubator
takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 24th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $25.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.
Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
Homer City, - - - Penna

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.
It is acknowledged to be **"The Best Poultry Magazine Published"** in the world.
Send for **Index** to last Vol. **free,** and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin with any** back number you desire.
Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. **"What has been done, can be done again."** Remember the price; 50 cts. one year; six months 25 cts; sample **free.** Remit cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

$20 PHOSPHATE FOR WHEAT. Sold to farmers direct. No Agents. **York Chemical Works.** York, Pa.

EGGS for setting from B. Plymouth Rocks, Brown Leghorns and Light Brahmas, M. B. Turkeys and Pekin Ducks, also breeder of Hamshirdown Sheep, English Beagles and Fox Hounds. A. Elwyn Strode, Box 1956, West Chester, Pa.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,** 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. **Oldest Homeopathic Pharmacy. Established in 1835**
The Poultry Doctor, 85 pp., 12mo, cloth, 50 cents.

LIGHT BRAHMAS exclusively, large size, fine shape, well marked, extra hackles, leg and toe feathers, remarkable layers, almost non-sitters. Always win in strongest competition. At Bloomington, Illinois, Dec. 1892, 1st on cock, 94½; 1st and 2d on hens, 92½ and 91½; at Indianapolis, Indiana, Jan. 1894, 1st on cock, 92; 1st and 2d on cockerels, 95 and 94; 1st, 2d and 3rd on pullets, 95, 94½ and 94½. A prize on every bird shown. Stock for sales. Eggs in season. **ALFRED DOYLE, Morgan Park, Ill.**

"LIKE WILL BEGET LIKE."
700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. At **New York,** Feb. '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. *"Like did beget like."* I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

Spratts Patent
Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Meal biscuits. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N. Y.

INCUBATORS & BROODERS

PAT'D.
Brooders only $5.00. The best and cheapest ever invented for hatching and raising Chicks, Turkeys and Ducks. 40 First Premiums, 1200 testimonials also eggs for hatching and fowls for sale of 40 varieties. Thoroughbred fowls warranted true to name. G. S. SINGER, Send for Cat'lg. Cardington, O.

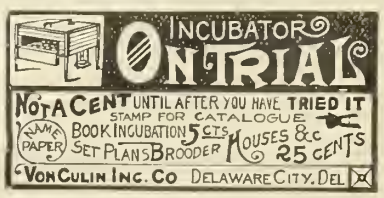
Sweepstakes at Chicago, 189
B. and W. P. Rocks, W. and S Wyandottes, W. and B. Leghorns and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free **F. M. HUNGER, DeKalb, Ill.**

ONLY $1.10! CANNOT BE EQUALED!
FARM POULTRY (Monthly) **50cts**
POULTRY KEEPER (Monthly) ..... **50 "**
FARM and FIRESIDE (Semi-Monthly) **50 "**
MODERN COOK BOOK ..... **50 "**
Total **$2.00**
All sent postpaid on receipt by us of cash or stamps, **$1.10.** Sample papers free. Address
FARM POULTRY,
Box F. P. BOSTON, MASS.

Scribner's Lumber and Log Book.
OVER ONE MILLION SOLD.
Most complete book of its kind ever published. Gives measurement of all kinds of lumber, logs and plank, cubical contents of square and round timber, stave and heading bolt tables, wages, rent, board, capacity of cisterns, cord-wood tables, interest, etc. Ask your bookseller for it, or sent postpaid for 35 cents.
G. W. FISHER, Box 238, Rochester, N. Y.

$1.50 each for yearling hens. $2.00 each for yearling cocks. Barred Plymouth Rocks from our prize stock. **CHARLES RIVER POULTRY YARDS,** Newton Lower Falls, Mass.

White Plymouth Rocks. Eggs and birds for sale. W. M BAKER, East Orleans, Mass



DOG TRAINING and How to Teach Your Dog Tricks. The instructions in this valuable little book are practical and ample for any amateur, and thorough humane. This work also contains a number of remedies for various ailments, and therefore is earnestly recommended to dog owners. It tells how to make a dog Answer to his Name—Give his Paw—Lie Down—Beg—Leap—Jump the Rope—Walk—Dance—Fetch and Carry—Bring his Tail in his Mouth—Roll a Ball—Walk on Stilts—Walk on Forelegs—Stand on Head—Sing—Make Believe Dead—etc. etc. Postpaid for 15 cents. Address Poultry Keeper Co., Parkesburg, Pa.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Marking Chicks.—How young can chicks be marked successfully, and which is best, the foot or the wing? What marker is the best?—D. L. N., Meadville, Pa.

Chicks can be marked when one day old. Mark them on the webs of the feet. Wigmore's instrument is the most successful one.

Thermostatic Bar.—Where can I get a thermostatic bar?—J., Wilmington, Del

At any rubber store. We know of no one who sells them.

Cheap Eggs.—Why are so-called incubator eggs so cheap, say $5 per 100, while a setting of thirteen will usually cost $2? Are they not as good for hatching, or why is it?—J. V., Grand Rapids, Mich.

Because the more eggs the cheaper, large numbers costing less to ship, proportionately.

Market Breed.—What breed of fowls would you advise me to invest in for market purposes?—J. V., Grand Rapids, Mich.

Probably the Plymouth Rocks for your section.

Corn Cake.—1. How can I prepare corn cake for young chickens? 2. Please tell me how to raise turkeys.—J. W., Baltimore, Md.

1. Ground oats, cornmeal and cooked meat. 2. See March, 1892, issue.

Preserving Eggs.—I notice in your last issue that some writer tells about preserving eggs. He fails to give the formula, and you, I think, wisely do not give his name. Now I, too, would like to know his scheme, but I guess he wants some of your readers to "bite" and then tell them they can have his formula for so much, see?—J. B. G., Houston, Texas.

The party had no receipt for eggs. It was a fraud. This issue contains all the known *methods*.

Scotch Terrier.—I would like to get a Scotch Terrier. Will you ask some breeder to advertise them?—J. B. T., Ivy Depot, Va.

For Scotch Terrier write to Fanciers' Journal, 333 South 3d St, Philadelphia, Pa., where breeder's name may be obtained.

Harper Brooder.—1. I made four Harper Brooders, same as the plans given in your August, 1891, issue. How can I prevent dampness in them? I have lost quite a number of chicks on account of it. I have tried both with and without water in the cups, but the same effect continues. Also, what plan is best to keep the lamp from exploding and blowing out when they are out of doors I nearly lost two of them by the lamp exploding. 2. Is there any danger in putting too much insect powder on young chicks? 3. How many chicks will the Harper Brooder conveniently hold and do well?—X. Y. Z., No address.

1. There should be no dampness unless water is placed in the cups. We do not advise moisture in a brooder. If the lamp is in a house, protected from draughts, there will be no draughts. It is difficult to protect it out of doors. 2. There is no danger with insect powder. 3. About fifty.

Difference in Eggs.—Is there any difference in eggs, or must I use a certain kind for the hot water incubator?—E. C. A., Rockford, Ills.

No difference in eggs, except to have them fresh and of normal size.

Diarrhœa in Hens.—What makes my setting hens have diarrhœa. They have corn and wheat by them all the time, also water in tins, and grit. The water sometimes lasts three or four days before it is gone, and I have a suspicion that it is caused by the water standing too long in the tins.—A. B. E., Sibley, Iowa.

Change the food, and give fresh water daily. Hens are too fat.

The Standard.—Where can I get the book "American Standard of Perfection?"—A. L. M., Oxford, Ind.

It is for sale by us at one dollar per copy.

Commission Merchants.—Where can I sell spring chickens? We can sell from fifty to sixty head every week.—W. R., Johnstown, Pa.

We know of no merchants, as we have no way of learning their names. There are some who advertise in this paper.

Uniform Heat.—Will sand in a tank, with S-shape pipes running through the sand, heated by steam, make a uniform heat equal to water?—J. W. B., Aitch, Ohio.

Nothing will keep as uniform heat as hot water.

Learning the Diseases.—How can the diseases, cholera, gapes, roup, etc., be detected to a certainty?—T. F., Sherman, Texas.

Our book, P. K. Special, No. 1, describes those diseases at length.

Yearling for Setting.—Is a hen one year old as good for setting as an older hen?—H. S., Grand Rapids, Mich.

Yes.

Too Fat.—What can I do for my hens when they lay soft-shelled eggs at night on the roost?—J. B. T., Marion, Ohio.

They are too fat; starve them down.

Hacking Cough.—My hens have a sort of hacking cough, but their heads are not swelled. What can I do for them?—S. D., Chattanooga, Tenn.

Due to taking cold, probably from a draught. Inject two drops of coal oil in each nostril.

Space for Fowls.—I have a lot 60x70 feet, on one end of it being a barn, 20x60 feet, and twenty-five feet high. Now how many chickens can I accommodate in that space without crowding on the start—R. C. H., Clinton, Iowa.

About 100 hens, which should be divided into about four flocks.

Feed for Setters.—1. What kind of feed is best for setting hens. 2 Will tin or wooden partitions between eggs in a tray (the same as are used in shipping crates) effect hatching in an incubator? I would like to use them for convenience in turning the eggs.—C. H. R., Bellevue, Ohio.

1. Feed anything that they will eat, allowing also corn and wheat. 2. The tin partitions may be used.

Number in Pens.—My rooms are 12x12 feet, and I have the Plymouth Rocks. How many hens and males shall I put in each room, the eggs for market only?—A. E. D., Kahoka, Mo.

About twenty hens.

Making Bars.—What are the ingredients in the composition of thermostatic bars for regulating incubators? I have made inquiries of the rubber companies of Montreal and none of them know anything about them, although they could make them if they knew what they were composed of besides rubber.—W. G., Montreal, Canada.

The bar is nothing but ordinary hard rubber, about half (or more) inch wide, and half inch thick, and should be had of any rubber store.

Gluten.—In the March number of POULTRY KEEPER, under the head "How to Fatten Ducks," James Rankin says the feed may consist of seventy per cent. cornmeal, and fifteen per cent. gluten. Now where can this gluten be obtained at a price that any poultry man could afford to pay? C. O. B., Lodi's Valley, Pa.

For the gluten, address C. A. Bartlett, Worcester, Mass.

Ball Under Feet.—I would like to know what to do with my Wyandotte rooster. He has a ball under his foot, so that he can hardly walk. It is as large as a five cent piece, and about half an inch high. I cut it twice with a knife, but it gave no relief.—W. H., Woodburn, Ore.

Keep the bird on straw, make an incision, and then poultice the foot. There is no other way, and probably he will never be cured.

Rye—Cold on the Bowels.—1. Is rye good feed for chickens? 2. What ails my chickens? They have a bad complaint of the bowels, and some of them pass blood. What is good for them?—T. J. P., Pleasantville, Iowa.

1. Yes. 2. Cold on the bowels. Give each a teaspoonful of castor oil.

White Wonders and Sherwoods.—What is the origin of the White Wonder and the Sherwood fowls? If a made-up breed, from what did they get the white plumage and feathered yellow legs? The Wyandotte comb in the former, and the single comb in the latter?—A. T. H., Lewistown, Pa.

We know nothing of the Sherwoods. The White Wonder is probably made up of White Wyandotte and Light Brahma.

Hatching Duck Eggs.—Will you please tell me if duck eggs can be hatched in an incubator as well as chicken eggs, and do you run the machine the same way? How about moisture, turning the eggs, ventilation, degrees of temperature, etc.? Also, which is the better place to set an incubator—a room where the temperature is kept at seventy degrees or in a cellar under the house?—H. J. G., Bound Brook, N. J.

There is no difference in hatching duck eggs and hen eggs in an incubator. Any place of even temperature will answer for the incubator, cellar preferred.

Various Questions.—1. Is F. P. Cassel's Chick Manna better than animal meal for young chicks? 2. Will a hen hatch goose eggs as well as a goose? 3. If a goose has laid about ten eggs and begins to sit, can we break her up, and will she lay more eggs? 4. Are the Black Minorcas as good layers as the Brown Leghorns?—A. R. C., West Fitchburg, Mass.

1 The animal meal of C. A. Bartlett, Worcester, Mass., is good. 2. A hen will not hatch goose eggs as well as will a goose. 3. Do not break geese up. 4. Minorcas are fully as good as Leghorns.

Hen Too Fat.—I have a Light Brahma hen that lays eggs like the one I send you in a small box. I would like to know what is the cause of it. They are as small as pigeon eggs.—C. A. S., Clinton, Iowa.

The hen is too fat.

Turkeys in Brooders.—Can turkeys be raised in a brooder, or will they do better with the hen?—Mrs. S. S., Arcadia, Ohio.

They can be raised in a brooder, but do best with hens, at this season, if kept clear of lice.

Clipping Wings.—1. Does cropping the wings of hens prevent their laying to some extent? 2. Which is the best way to keep eggs five or six months?—M. E. D., Piercy, W. Va.

1. Clipping the hens' wings does not affect laying. 2. See article on the subject in this issue.

Tanks.—Is zinc or galvanized iron used for tanks in the Poultry Keeper Incubator?—C. F. H., Elma, Wash.

Galvanized iron is preferred, though zinc may be used.

Mites.—How can I get rid of mites? They are in the bottom of the nest boxes, after a hen hatches. They do not bother the hen or chicks, but I do not like them around.—B. B. M., Palatine, Kans.

Pour coal oil in the cracks of the nest, after the hatching is done. It is also a good plan to pour the oil over the roosts every now and then.

Sex of Eggs.—Is there any difference in the shape of an egg (that is, short and round, or long and slim) for the production of cockerel or pullet?—F. W., Mendon, N. Y.

The shape of eggs does not influence sex.

Eggs for Incubator.—Is there any difference in eggs, or must I use a certain kind for my incubator?—E. C. A., Rockford, Ills.

No two eggs are exactly alike in any respect. It is best to use the best eggs that can be procured.

Duck Questions.—1. Is there the same danger in over-feeding ducks when eggs are wanted as with hens? 2. Will ducks take the roup from roup hens? 3. Does it require any more moisture in a Monarch Incubator for ducks than for chicks? 4. Will ducklings go under the pipes and receive more heat than is good for them in case the pipes are too hot?—S. D. G., Kansas City, Kans.

1. Yes. 2. Yes. 3. No. 4. No.

Moisture for Duck Eggs.—Give directions for applying moisture to duck eggs set under a hen.—J. K. L., Centreport, Pa.

No more moisture is needed for the duck eggs than you would give to the hen eggs—some affirm that even less is required.

Removing Eggs.—Is it best to test and remove the eggs from the incubator that are not fertile? If so, at what time after starting the incubator? Would it be policy to put in fresh eggs in place of those tested out, keeping the incubator going until all are hatched.—W. B. C., Sioux City, Iowa.

It is best to test eggs so as to use them as food for fowls. Fresh eggs cannot be added, as the animal heat of the fresh eggs is less than the heat of the eggs already in the incubator.

Caponizing Tools.—Who keeps the best caponizing tools?—W. P. W., Drayton Island, Fla.

For caponizing instruments address W. H. Wigmore, 107 South Eighth St., Philadelphia, as his are the best and the cheapest.

Perfect Hatcher.—Where is the perfect hatcher made, referred to in your book on incubators?—Mrs. B. C., Washington.

It was formerly made in Elmira, N. Y., but we have not heard of it for years.

Smallest Bantams.—Which breed of bantams are the smallest? The silver Sebright bantams are classed as being extra small.—J. W. A., Vienna, Ind.

The Game bantams are the smallest.

Bone Cutter.—Which is the best green bone cutter to buy? Is Mann's so much better than Webster & Hannum's to warrant the difference in price?—G. C. H., Sauk City, Wis.

Both are good machines, and worth the price asked.

Room for Brooder.—1. I have a small room in the house, about six by six feet, with windows on the east and south. Could I put a small hard coal stove in it and use as a brooder for newly hatched chicks. 2. Some of my hens are losing the feathers from the back of their heads. Is it lice?—R. E. H., Streator, Ills.

1. The chicks would have to have a "mother" to hover under, or they would crowd and trample the weaker ones to death. 2. Probably feather lice are at work. Grease the heads with a little lard.

SOME OF THE NEIGHBORS SAY.

More birds are killed by what "some of the neighbors say" than by diseases. A man has a flock of fowls, and they are attacked by disease. Then some of the neighbors call and show their ignorance in advising him. Here is a sample. A reader at Rockaway, Ohio, writes:

"I have been taking your paper for over a year, and see very little about the gape worm. For the last two or three weeks I have noticed the chicks coughing and sneezing, sounding like matter in their throats. My hens have indigestion and liver trouble. I see very little about this trouble in your paper. There is lots written about cholera, and some of the neighbors say it is cholera, but I think not, as they mope around two or three weeks before they die. They go coughing, and I opened one, finding the liver two or three times as large as it should be. I gave them some corn for the first time for over a month, and the corn remained in the crop."

We have given so much about gapes and liver disease that we really feared our readers would object, yet the writer never saw anything on the subject. The birds have been exposed, and have roup, no gapes or cholera, as both of those difficulties make short work, and never hang on for two or three weeks. The liver disease is due to the hens being too fat, and also, perhaps, to lack of sharp grit. If the birds do not recover during warm weather, it will be too laborious to attempt to cure them. Destroy all of them and begin anew, first disinfecting the premises. Never pay any attention to what the neighbors say unless they are successful with poultry.

WHY THE YOUNG TURKEYS DIE.

A Michigan reader has lost his young turkeys, and as his difficulty is one that is met with by many other readers, we give what he says, as follows:

"Why do my young turkeys die? They first start to jump around, and keep their eyes closed until they die. I have them in the barn, on a dry floor."

The cause of the trouble is the large "bloodsucker" lice, that work on the skin of the heads and necks. These lice are never seen unless a search is made close to the skin, by opening the feathers. They come from the hen to the chicks. Whenever a chick or turkey appears sleepy, the cause may be traced to the large lice. In some sections it is known as the "sleepy disease." Rub two drops of sweet oil on the heads twice a week. Be careful not to use the oil too freely.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Scribner's Lumber and Log Book, Fisher's Grain Tables, one year, Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks (Jacobs).

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

VOL. X. PARKESBURG, PA., AUGUST, 1893. No 5

CONTENTS.

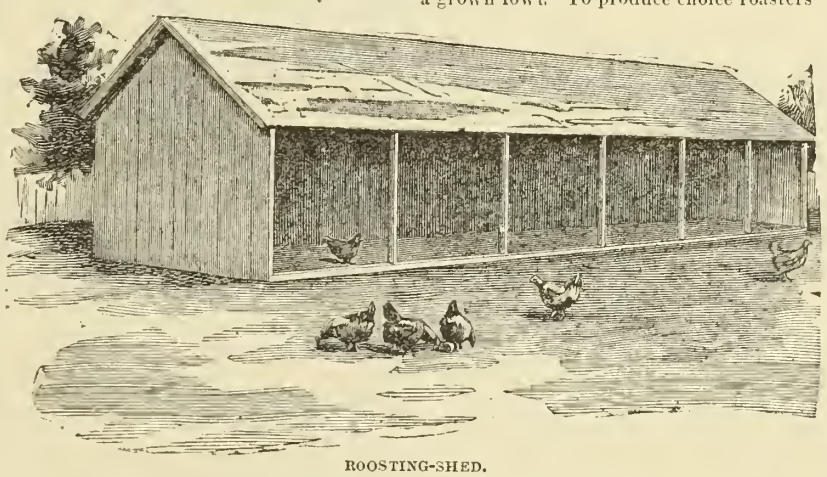
Roosting Shed, (Illustrated)—Large Chicks for Roasting—Farmers' Flocks—Milk and Buttermilk in Summer—What Market Chicks Should Be. 65
Experiments With Capons. 66
Regulator for Incubator, (Illustrated)—Locations for Raising Poultry—Oil-Cake Meal—High Roosts—Bulky Food—Minks and Hawks—Scrapings from the Yards—The Common Duck—Don't Stuff the Hens—Tarred Paper for Roofing—What is an Egg—Double-Yelk Eggs—Turnips for Ducks—Selling Old Hens—Working up Raw Material—Cabbage for Hens—The Cheapest Foods. 67
Chicks Dying in the Shells—Saved Seventy of Them—Running Incubators—How he Gained his Knowledge—He was Determined to Get There—Believes in Moisture—How to Hatch and Raise them—Hernia and Leg Weakness. 68
Scoring the Standard—Read Your Paper—That Butter and Egg Article—Queer Case of a Hen—Brief Remarks from Readers: Early Laying—Poultry on a City Lot—Natural Gas for Brooding—Fowls for Cold Weather—Millet Seed—Good for a Start—Setting Turkeys—A Good Beginning—Dead in the Shell—Keeping Hens Healthy—Best in the World. 69
Incubator Hatched Chicks—Within the Reach of All—Fed Salt by Mistake—Feed for Fifty Hens—Hatching Fractured Eggs—Keeping Fowls in Condition—Eggs a Specialty—Homœopathic Treatment—Heater for Incubator, (Illustrated)—Turpentine for Roup—Breeding Ducks—Eggs and the Sitting Hen—Cleaning the Poultry-House—Room in the Poultry-House—The Barn-Yard Refuse—The Pea-Comb on Fowls. 70
A Cheap, Home-Made Incubator, (Illustrated)—The Commission Merchant—Shipping Healthy Fowls—Late Layers—Meat and Milk—Killing the Lice—Equalizing Foods—Quality Makes the Price. 71
Editorial Items—For One Dollar—New Breeds—Specialty Clubs—The A. P. A. Meeting—Plans for an Incubator—Look Out for Them—A South Carolinian's Wrath—New York Poultry Society 72
Silent Contempt—Worked Mottled Birds—Standard Language—Weights of Eggs and Chicks—Buying Stock Now—Canadian Wyandotte Club—Toronto Poultry Association—The Seattle Poultry Club—Experiments in Crossing—The Change in the Fanciers' Journal—Mr Devlin Endorses Mr. Phillips—How Much Moisture 73
Mr Hinkle Opens his Batteries—Bits to Prevent Feather Pulling, (Illustrated)—The Gape Worm—Only the Game Chicks Died—The Cost of Poultry. 74
Cheapest of all Houses, (Illustrated)—Fat Hens Again—"Miller Purvis" on Fat Sitters—Head Lice Every Time—Overfeeding or Lice—Making the Hen Lay. 75
A Record of 13 Hens—Rose-Comb Minorcas—Mrs Mellette and Our Alfalfa—Curing Fish and Cornfodder—Red Caps—Deformed Chicks—How Much Capital—Moulting Hens—Whew!!!—Must Eggs Rest—Cases for Consideration—Plums in the Poultry Yard—Ought to Raise Ducks. 76
About Pigeons—Poultry and Pet Stock Company—The Great Show at Narragansett Park—Soft Feeding—Weights and Prices—Too Much Weight—Increasing Egg Production—Tobacco and Gapes—Fumigating For Lice 77
The Plymoth Rock—To Prepare Feathers for Use—Prolificacy of Fowls—Summer Food—Hold on to the Good—Advertisements 78
Advertisements 79
Bureau of Information—Something About Buying Eggs—Hens or Pullets—Experimenting—Cooked Meat and Broth—Let Your Hens Sit—Cater to the Public—Fatten the Fowls—How to Cross—Publisher's Department. 80

As some hens will hatch out full broods and others fail to bring off but very few, at this season of the year the chicks may all be given to one hen, and the extra hen then broken up from sitting, instead of compelling her to hatch out another sitting of eggs, as is sometimes done by those addicted to cruelty. If a hen goes on the nest and remains there three weeks, she will be brought to a condition most favorable to laying, and all that is necessary is to give her liberty on the range, with an allowance of an ounce of fresh, lean meat daily, and she will not only soon begin to lay, but will lay a large number of eggs before she will attempt to sit again. It is always best to let a sitting hen go on the nest and remain two weeks or more, as it is to her advantage, being nature's method of equalizing the forces at work and of getting her in a proper condition. A sitting hen should never be broken up until she has reduced herself in flesh

ROOSTING SHED.

There are some who believe that the fowls should approach as near an outdoor life as possible, and that even the roosting on tree limbs is sometimes better than a close poultry-house. We give, as an illustration in this issue, a roosting-shed (not a poultry-house), which is well adapted for a large flock of turkeys in winter, as the roosts may be placed high under the peak, and it is also an excellent arrangement for hens in summer, for roosting.

If one portion near the end be closed, and a window attached, the house becomes a covered yard, open to the south. The shed may be of any size, and as no boards are required on the front and no windows are necessary, the cost of the shed is but very little. As a location for hens with chicks early in spring, it will serve admirably. It is not only a wind-break, but a protection against snows and rains, and where the climate is not too cold it will answer for hens in winter as well as for turkeys.



ROOSTING-SHED.

LARGE CHICKS FOR ROASTING.

As the greatest loss of young chicks occurs before they reach what is known as the "broiler" period, the question may well be discussed whether it is more profitable to retain the chicks until they weigh three pounds, or sell them when they weigh only a pound and a half each. The price of the small chicks may be forty cents a pound, or sixty cents for the chick, while a chick known as a "roaster" will sell at twenty-five cents a pound, and may weigh from two to three pounds. There is only fifteen cents difference in the sums realized for the chick weighing a pound and a half and the one weighing three pounds; but it should not cost over ten cents to feed the chick until it reaches the three-pound stage, which leaves only five cents in favor of the larger chick. There are other matters, however, to be considered, and among them is the fact that the larger chick will require no extra labor and care compared with that bestowed on the smaller chick, and there will not be a necessity for hatching them quite so early in the season.

Although much is frequently said about early broilers for the large cities, it may also be mentioned that of late years a demand is growing for what is termed "roasters," which means simply chicks that are beyond the broiler weight. Sometimes they may weigh as much as four pounds and sell for one dollar per chick, but the prices range from twenty cents per pound and upward, often as high as thirty cents per pound being obtained when the supply is short; but as soon as "green" ducks begin to come into market, they take the preference over the roasting chickens.

It is seldom that a roaster sells lower than fifteen cents per pound, and it will always bring fifty cents in a good market, which makes it profitable compared with a fowl which sells for ten cents a pound and which is a year old, the old males seldom bringing over seven cents per pound, while the roaster may be either a male or a female. The best time to sell, then, is when the chick is under four pounds weight, as it will bring a larger sum than if it is retained until matured, while the expense of its keep will be very much less than that of a grown fowl. To produce choice roasters the male with the hens should be a Wyandotte, Houdan, Plymouth Rock or Brahma, as the chicks from such breeds or their crosses grow rapidly and present attractive appearances in market.

FARMERS' FLOCKS.

The farmer has plenty of room on his farm for poultry, and the land so devoted will return as large, if not larger profits than will an equal area planted to a crop, or used for other stock. Cheap houses can be built to shelter a hundred or more fowls, which will bring in the cash in the winter season by producing eggs, thus largely aiding him to purchase many necessaries while waiting for his crops to grow. There is but little risk of loss in keeping hens if they receive only a part of the attention bestowed on animals, and a very large percentage upon the cost is the certain return that may be realized by a farmer, on a small or large scale, where the business is conducted properly. There is more profit in raising choice poultry and making a specialty of eggs, considering the cost and outlay, and which can be had annually, than from many other sources, not excepting cows pigs or sheep, and yet the animals are fed and cared for at an expenditure for labor that would be considered appalling if bestowed on the hens, though the hens pay cash dividends daily for all they receive. Farmers would do well to look into this matter, and now is the time to consider it before winter sets in. Good fowls of any of the improved breeds may now be had at a very reasonable price, and we call the attention of those who have the facilities for keeping fowls, of taking advantage of their opportunities.

MILK AND BUTTERMILK IN SUMMER.

While milk and buttermilk are excellent for fowls and chickens, it will not be beneficial to give either unless fresh and unchanged. To place milk where it is liable to be fermented (or become sour), may be the cause of bowel disease. It is true that some persons feed sour milk to poultry, but we have known it to kill chicks when given too liberally. Skimmed milk is a very cheap article in some sections, and there is no necessity for giving it in any condition except fresh, especially in the summer season. The hens will not drink sour milk if they can get milk that is fresh. For chicks, the best method is to mix the food with milk, let the chicks eat all they desire at one time, and clean away that which is left. For fowls that have a range, a pan of fresh milk at night will be all that they will need in the shape of food, as they will find all they wish on the range. Milk is highly nitrogenous and answers a purpose as a part of the ration, but, like all other substances allowed, it gives the best results when in a fresh and wholesome condition.

WHAT MARKET CHICKS SHOULD BE.

When a chick weighing between one and two pounds is picked clean, and is ready for market, it presents a very unsightly appearance unless the chick is as fat as it can be made, or unless the work of dressing is well and properly done. The dealers know what chicks should be, and closely examine them, allowing the prices in proportion to the quality and appearance of the chicks. For the benefit of our readers who may desire information in regard to the proper preparation of broilers for market we will describe those intended for New York and Boston. For the former city leave the chicks entire, which means that the head must not be cut off nor the entrails drawn, while for Boston the head must be removed and the entrails drawn, but in both cases there must be no food in the crop. To know when the broiler is fat, look along the line of the backbone. The greater the amount of fat along the backbone, the fatter the chick in all other portions of the body. Remove the feathers by dry picking, and do not scald the chicks. Take off every one of the pin feathers, and, if necessary, shave the body. Then immerse the carcass in ice-cold water until all the animal heat is removed, and wipe dry. Do not use any packing material. Lay a piece of muslin in the box, then put in the hicks, cover over with muslin, and fasten at the top of the box, allowing free circulation of air.

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

EXPERIMENTS WITH CAPONS

Mr. W. P. Wheeler, of the New York Experiment Station, has given much of his time to experiments with capons, as also Mr. Samuel Cushman, of the Rhode Island Station. We regret that we cannot give the whole subject presented in Mr. Wheeler's bulletin, but give below extracts that may be of service. Mr. Wheeler says:

During last fall and winter four lots of capons and also one lot of cockerels were fed for periods of five months. These records of feeding include the time at which the birds were caponized and account for any loss of weight or smaller gain during certain periods in consequence.

Fowls of several breeds, and a few crosses, have been used: Light Brahma, Buff Cochin, Plymouth Rock, Black Langshan, Indian Game, Indian Game—Light Brahma cross, Indian Game-Buff Cochin cross and W. P. Rock-Black Minorca cross.

The cockerels were caponized at an average weight of 3.8 pounds. The average weight of those caponized at smallest size (B. P. Rocks) was 2.7 pounds, and of those at largest (the Light Brahmas) 4.8 pounds, when the operation was performed. While the former recovered from the operation much more rapidly, the latter made after recovery much the more rapid and profitable growth.

The average loss in weight from thirty-six hours fasting and operation was 11.2 per cent. Within five days thereafter the birds had generally recovered the weight lost, so that seven days from the time of the removal found the cockerels back in the pen as capons at the same weight (the average showed a slight increase of three-tenths per cent), with but the additional cost for food of that consumed during the five days.

The special feeding of the separate lots was not begun until they had attained the weight of from two to four pounds.

The excess that the average market price show over the cost for food, however, is enough to promise a fair profit, for an ordinary per cent of loss, for any reasonable investment or labor, etc. The cost of caponizing where the services of an expert operator can be obtained, is but a few cents per fowl (sometimes as low as four cents). After a fall in the high broiler prices of spring and early summer, it will probably be found more profitable to caponize the surplus cockerels than to market them, especially where cheap skim-milk and grain is to be turned into market product. For while often the per cent of profit over the cost of food is selling at broiler age is greatest, the actual difference *per fowl* in market price over cost of food is greater with the capon, providing the latter is sold before growth has ceased. After caponizing the labor in caring for and feeding is but little more than in feeding cattle or pigs, and the proportion of labor to produce 100 pounds of capons is therefore less in production of 100 pounds of broilers, as the latter have most of the time been with the hen or in brooders. * * * *

As the demand for capons does not come from those who are looking for the cheapest possible animal food, it is evident that effort should be made by any grower toward improvement in quality, and the most successful and profitable competition will probably be in this direction.

It is better of course to use only the larger breeds for capons, and the Brahmas and Cochins are among the best; but while these breeds furnish poultry of superior size and excellent quality, there is compared to the Game an undesirable deficiency of breast development, which is plainly noticeable in dressed fowls. * * * *

COCKERELS AND CAPONS.

One lot of cockerels was fed at the same time with these lots of capons. These cockerels, Buff Cochins, were entirely comparable with the lot of the same breed selected for caponizing, being of the same parentage, age and previous treatment, with the exception that, as no pen large enough was available at the time the lot for caponizing was separated, the cockerels were allowed to run for a few weeks longer before special feeding began. The feeding trials with the capons began in August and with the cockerels in September.

The proportion of skim-milk in the ration was about the same for each during all the time, after special feeding of the cockerels began, except the last two weeks. With the cockerels, during eighteen weeks, the skim-milk supplied over forty-nine per cent of the total food and eleven and one-half per cent of the water-free food; and with the capons, during the same time, over forty-seven per cent of the total food and nearly eleven per cent of the water-free food. The ratio of protein to total carbohydrates was nearly the same in each ration.

The growth made by the cockerels was more rapid than that of the capons but much less regular. Although on September 26th, the cockerels averaged nearly six-tenths of a pound lighter than the capons, they averaged on February 13th nearly nine-tenths of a pound heavier. The cockerels consumed more food, however, than the capons, so that at nine pounds average weight the cockerels had cost seven-tenths of a cent per pound live weight more than the capons. At the average weight of six pounds, a few weeks after the operation of caponizing, the cockerels had cost less, having cost at this weight six cents per pound, and the capons having cost six and seven-tenths cents per pound live weight.

The Cochins were caponized at the average weight of 4.3 pounds. The loss from fasting and the operation was 10.8 per cent but during the week in which caponizing was done the average gain was 1.8 per cent. * * * *

GENERAL OBSERVATIONS.

While capons continue to command so much higher prices than the average of poultry of the same weights, it will probably be found more profitable to caponize surplus cockerels of the larger breeds after the high broiler prices of spring and early summer have dropped—especially where cheap food is available. With the fancier, of course, whose time is occupied in the production of breeding and exhibition stock, the earlier the surplus chicks are disposed of the better.

The labor required in feeding capons is less than with young chicks. The cost of caponizing is small where expert services can be obtained, and an expert should be employed where possible. The methods of operation can be learned from the printed instructions accompanying several of the different sets of instruments advertised and sold, but anyone endeavoring to teach himself should operate on *several* dead cockerels before attempting to operate on a live one.

The largest breeds will be found the most profitable for capons, and it is useless to caponize cockerels of the smaller breeds.

Skim milk can be profitably fed to capons and, if sweet, in large quantities. If sour, very little should be fed. It is very important that the dishes from which milk is fed should be cleaned often and scalded occasionally.

A variety of feed should be given to capons as well as to other fowls, and rations somewhat similar to those fed in these experiments will give good results. With equally good lots of birds, rations differing somewhat (but not excessively) in the proportion of nitrogenous to non-nitrogenous constituents will not make much difference in the growth.

The cost of feeding capons after they have nearly reached their full size is approximately five cents per day for each 100 pounds live weight. The advisability of holding those of middle weight breeds, after reaching seven to eight pounds weight, or the larger breeds, after reaching nine to ten pounds weight, will depend upon the prices to be obtained.

At the Rhode Island Station different breeds were used, but we take the tables below of Plymouth Rocks and Indian Games. Mr. Cushman, who is one of the most energetic experimenters in the United States gives some of his results as follows;

EXPERIMENT (PLYMOUTH ROCKS.)

July 8th, twelve Plymouth Rock cockerels were separated into two equal lots which matched in size and weight of birds, the average being 1.95 pounds. The cockerels having the poorest combs were castrated July 10. These birds seemed to recover less rapidly than either the Brahma and Cochin cross or the Langhans, and one capon died August 1, evidently from some trouble with the wound, probably resulting in absorption and blood poisoning, for two small tumors were found upon the bird.

The combs of two of the castrated birds continued to grow, though slowly, and it was at first supposed that it was because they were developed when castrated, and that "dubbing" or the removal of the comb at that time would have given them the same appearance as the rest, but later it was evident that they were slips.

It will be seen by the record of the weights of both lots that these birds caponized July 10th, had caught up in weight with the roosters by September 4th, and averaged somewhat heavier the remainder of the season.

	Number of Birds	Average Weight
July 23	6 Capons	2.42 pounds
July 23	6 Roosters	2.66 "
July 30	6 C	2.86 "
July 30	6 R	3.83. "
Aug. 1	1 Capon died.	
Aug. 6	5 C	3.24 "
Aug. 6	6 R	3.37 "
Aug. 13	5 C	3.18 "
Aug. 13	6 R	3.72 "
Aug. 20	5 C	3.52 "
Aug. 20	6 R	3.94 "
Aug. 27	5 C	4.00 "
Aug. 27	6 R	4.10 "
Sept. 4	5 C	4.98 "
Sept. 4	6 R	4.80 "
Oct. 29	5 C	6.63 "
Oct. 29	6 R	6.38 "
Nov. 5	5 C	6.90 "
Nov. 5	6 R	6.55 "
Nov. 12	5 C	7.03 "
Nov. 12	6 R	6.75 "
Nov. 19	5 C	7.11 "
Nov. 19	6 R	6.91 "
Nov. 26	5 C	7.46 "
Nov. 26	6 R	7.27 "
Dec. 3	5 C	7.54 "
Dec. 3	6 R	7.47 "
Dec. 10	5 C	7.89 "
Dec. 10	6 R	7.77 "
Dec 31	5 C	8.06 "
Dec. 31	5 R	7.43 "
Jan. 8	5 C	8.20 "
Jan. 8	4 R	7 59 "
Jan. 15	5 C	8.28 "
Jan. 15	4 R	7.87 "
Jan. 21	5 C	8.10 "
Jan. 21	3 R	7.50 "
Jan. 28	5 C	8.36 "
Jan. 28	3 R	7.93 "
Feb. 5	5 C	8.72 "
Feb. 12	5 C	8.54 "
Feb. 19	5 C	8.96 "

EXPERIMENT (INDIAN GAMES).

Six Indian Game cockerels were procured, and on September 4th three were castrated, one partially castrated (a small part of one testicle was not secured), and two left for comparison.

The flesh of these birds was so hard and firm and the ribs so close, that they were less easily castrated. They were not exhibited at the poultry exhibition. When dressed they made the finest appearing poultry that we have ever seen. The flesh of the slip was hard, but that of the capons very tender.

Their weights compared as follows:

	Number of Birds.	Average Weight.
Jan. 8	3 Capons	6.18 pounds
Jan. 8	2 Roosters	6.54 "
Jan. 8	1 Slip	8.06 "
Jan. 15	3 Capons	6.42 "
Jan. 15	2 Roosters	6.72 "
Jan. 15	1 Slip	8.12 "
Jan. 21	3 Capons	6.18 "
Jan. 21	2 Roosters	6.48 "
Jan 21	1 Slip	8.12 "
Jan. 28	3 Capons	6.35 "
Jan. 28	2 Roosters	6.42 "
Jan. 28	1 Slip	8.12 "
Feb. 5	3 Capons	6.72 "
Feb. 5	2 Roosters	6.50 "
Feb. 5	1 Slip	8.25 "
Feb. 12	3 Capons	6.80 "
Feb 12	2 Roosters	6.66 "
Feb. 12	1 Slip	8.51 "
Mar. 31	3 Capons	6.85 "
Mar. 31	1 Slip	8.66 "
June 29	1 Capon sold	7.32 "
July 19	1 Capon	8.37 "

A number of birds were castrated to teach the operation. Several of the students who had witnessed the work were able to do it at once without losing a bird, but there were in the fall about twenty per cent of "slips" among this lot. Of the eighty caponized on the place the first season (1891) there were five lost as follows: Of the first four, one; of the next eleven, none; of the next three, two (Langshan, too large and tough; of the next six, none; of the next four, none; and of the fifty-two cut by myself and the students, none at the time of the operation, although two died afterward from the wound not having properly healed. The fifty-two were cross-bred birds, having considerable Plymouth Rock and Wyandotte blood. They were of medium size and became fit for market in shorter time than those with which the experiments were performed. They were not weighed during growth.

During the past season experiments in this line have been continued. About 100 birds have been operated upon. Dorkings, Brahmas, Houdans and their crosses have been very satisfactory material for the operating table, while Indian Games and their crosses have been more difficult to do. Some Plymouth Rock stock is hard to caponize, their thighs being close against the ribs and so near the place where the opening should be made that it is hard to do the work without laming the bird.

A lot of chicks from an Indian Game cock and Plymouth Rock grade hens caponized for a farmer in another part of the State, was the worst lot that we have ever been called to operate upon.

Besides being considerably too large and not having been fasted long enough, their flesh was very compact, their ribs almost immovable and the thigh so close to the last rib that there was no chance to make an opening back of the ribs, which may sometimes be done when they are too close and stiff.

ANTISEPTIC TREATMENT.

In surgical operations where an opening is made into the abdominal cavity of a person or animal it is customary to rinse or spray the parts with an antiseptic solution. This is to destroy the bacteria (germs of decay present in the air) that may reach these parts while they are exposed and which otherwise might develop, cause an unnatural condition and interfere with the proper healing of the wound. Great care is also taken to thoroughly clean instruments after use that nothing may be left on them in which these germs may grow. They are also placed in an antiseptic solution before they are used. The expert caponizer, however, rarely takes precautions of this sort. Usually the instruments are not even washed at the end of a day's work. The blood is allowed to dry on them and is scraped off when they are next used. In theory at least this is all wrong. Practically in this case it may make no difference as the subjects are almost always healthy and heal naturally.

To see if anything might be gained by following the example of surgeons we have the past season sprayed the cavity and mouth of the wound with a 1 to 4000 solution of corrosive sublimate * using one-quarter of one of Wyeths 7.7 grain tablets to a pint of water. It was applied with a cheap sprayer that can be obtained of any druggist. In the case of the few birds experimented upon we have seen no difference between those that have and have not been sprayed. We shall continue this practice with a part of our birds that we may arrive at some practical conclusions regarding it.

CAPONIZING BY LAMPLIGHT.

The caponizer is so dependent upon bright, pleasant weather for sufficient light that he is often much hindered in his work by cloudy or rainy days. Often when birds have been fasted and are in just the right condition for the operation, a sudden change in the weather causes the sun to be obscured and he must stop or work at a disadvantage. If the operation is postponed the bird must be reduced by another fast. Sometimes when operating on a large lot a long way from home the operator is stopped by darkness when but a few are left and he must do them at another time. Some try to finish by the light of a lamp having an ordinary reflector, but this is unsatisfactory. Any means that would enable him to work when sunlight failed would be a boon to the caponizer.

A simple way to overcome this difficulty was suggested by Dr. Tremain, of Providence, who came here to witness the operation on a cloudy day. He suggested that a head mirror, such as physicians use for reflecting light into the human throat while performing laryngotracheotomy might enable one to caponize readily by lamp light. Acting upon the suggestion at once we found we could work successfully and with nearly as much ease as in sunlight.

This mirror or reflector is fastened by a head band just above the bridge of the nose, and can be turned at the desired angle to throw a powerful ray of light into the cavity, which shows the veins, arteries and organs as plainly as sunlight. Coming nearly from between the eyes it reaches wherever the eye may, while the hands and instruments get in the way of the light less than when sunlight is used After one becomes accustomed to holding the head so that the light will not move it is easy to do the work.

SUMMARY OF EXPERIMENTS.

Caponizing was easily learned and successfully performed by following book directions, but more quickly and satisfactorily by witnessing the operation.

Birds apparently suffered but little pain from the operation, and the per cent of loss was small.

Birds thus changed grew larger in frame, matured later, became quiet and contented, did not crow or fight and their flesh remained soft and tender.

Those weighing two pounds or less were most easily and safely caponized, but the larger the birds, provided they had not commenced to crow and their combs had not developed, the more quickly they recovered.

The only birds that died under the operation were those that had developed combs.

The old Chinese tools, when their use was understood, were found most satisfactory to all.

Of the Brahma Cochin cross, it was seven months before the capons equalled the uncastrated birds in weight, and they did not average one pound heavier in ten months.

The Langshan rooster although weighing but one-sixth of a pound more than the Langshan capon at the commencement of the experiment kept ahead in weight for seven months.

The Plymouth Rock capon equalled the roosters in weight in less than two months and gained on them the rest of the season, but did not average more three quarters of a pound heavier at any time.

The Indian Game Capons were five months in catching up with the roosters, and were not a quarter of a pound heavier eight months after the operation.

The Brahma Cochins gained the least during the first year, but made the largest and heaviest birds at eighteen months.

The Langhan was less affected by the operation, but was larger at the time it was performed.

The Plymouth Rocks recovered less readily, but they were operated upon when the weather was warmer, fifteen days later than the Langshan.

Indian Games and their crosses were harder to do and should be taken when younger.

These experiments show less gain in weight as the result of caponizing than we were led to expect by published accounts. The tender flesh and the ability to quickly take on fat seemed to be the only gain of importance.

During the exhibition of the Rhode Island Poultry Association, the ten Brahma Cochin capons and the five Plymouth Rock capons gained, while the roosters of each lot lost in weight. The Plymouth Rock capons made the greater gain, while the Plymouth Rock roosters also showed the greater loss The birds exhibited in pairs lost more than where there were five or more in the coop.

The plan of spraying the wound immediately after the operation with an antiseptic solution, requires further study to get definite results.

By the use of a physician's head mirror, we were able to operate quite satisfactorily by lamp light.

Those wishing to produce only a limited number of capons will find it more profitable to secure the services of an expert, if one can be found within a reasonable distance, than to buy instruments and attempt the work themselves.

NOTES ON EXPERIMENTS.

Had the roosters and capons been yarded separately instead of being allowed to run at liberty, it is possible that there would have been a difference. The roosters were naturally more active and might have secured more food, although a generous amount was regularly given. On the other hand, preventing the roosters running about, by confinement in yards might have increased their weight and made the difference still less. In the thirty-five days, from January 8th to February 12th, 1892, the Indian Games gained as follows: Capons, .62 pounds; slip, .48 pounds; rooster, twelve pounds.

Writers on caponizing compare the price of capons at maturity with the price of roosters at maturity. To be sure, if the cockerels are to be kept until they must be sold as old fowl, meanwhile fighting and running their flesh off, it would certainly pay well to caponize and keep them until nearly a year old; but they ignore the fact that early cockerels weighing five to six pounds when they are soft and tender, will bring as much or more *per pound* than a nine or twelve pound capon that has been kept twice as long. Quick returns are desirable and the danger of loss by disease deserves consideration.

Had the Brahma Cochin roosters of the second experiment been killed December 1st, when they would have been beyond the tender stage, they would have dressed about seven pounds each and brought but twelve cents per pound, (probably several cents less), or eighty-four cents. In July the same birds would have dressed about three and three-fourths pounds, and would have brought thirty-two cents per pound or $1.20. If sold a month later, in August, although they would have weighed more, they would have brought less, say four and three-fourths pounds dressed at twenty-four cents, or $1.14. This may be compared with a seven pound dressed capon at twenty-two cents in January, $1.65 (forty-five cents for five months feed) or a nine pound dressed capon at twenty-six cents in April. $2 34, ($1.20 for bird in August and $1.20 for nine months feed and care.) This estimate is based on the weight of birds as recorded, and the market prices furnished at Boston, Mass., and New York City. These prices are for the very best quality of native fresh dressed poultry. We find that capons (western) were a drug in the Boston market last February, and could be bought for twenty-two and twenty-five cents per pound. The demand is less here than in New York, where they are more appreciated or better known. The sale of capons has been hurt in some instances by selling pullets and roosters with small combs plucked like capons, but no one who knows need be deceived if the feathers and head are left on. When the market is bare of fresh summer raised poultry and everything but frozen stock or small sized winter chicks are scarce (from January to June) there is a demand for a large tender "roaster" and capons fill the bill. They usually bring the best price in April and May when they are becoming scarce. Before chickens were so extensively raised, at all times of the year by artificial means capons brought high prices.

While visiting the New York markets we learned that great quantities of capons are received about January 1st. The finest specimens and the greatest number are from New Jersey. None are received from the east, and those from the west are of poorer quality and contain a large proportion of "slips," although they are growing better each season.

At this time there is hardly a limit to the demand for capons weighing eight pounds or over, and "Philadelphia" capons bring twenty cents and western eighteen cents.

Large birds sell the best. The heavier the better. When ten-pound birds bring twenty-two cents, twenty-five cents will be given for twelve-pounders, and twenty-eight cents for those weighing fourteen pounds. Capons killed at ten or eleven months of age are preferred, as they get coarse and "soggy" if kept until twelve months old or longer. March hatched capons should be killed in January. The birds bought in January are placed in freezers and gradually sold during the winter. A firm in Fulton Market, informed me that they had in January, 1891, put in their freezer fifteen tons of capons.

A number of other firms freeze as many or more when they can be bought. The supply is always exhausted before July. Prices begin to rise the latter part of February and continue to go up until there are none in the market. They are usually scarce in April and May. One firm informed me that they could sell a ton of capons at twenty-six to twenty-eight cents per pound that day if they had them. On July 7th, 1892, capons weighing nine and ten pounds were selling at retail in Fulton Market for thirty-five cents per pound. Seasons when grain is high, capons are not so extensively produced as the price is firmer.

Frozen capons cannot compare with those freshly killed in spring and early summer.

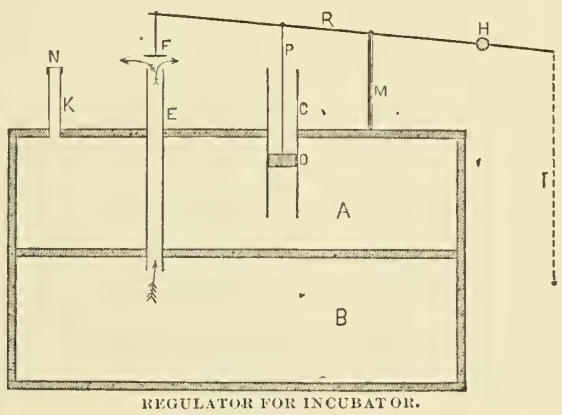
* Corrosive sublimate is a deadly poison and must be handled with great care.

REGULATOR FOR INCUBATOR.

As many of our readers are using the hot-water, home-made incubator, the attachment of a regulator will be favored by some. As the hot-water incubator cools very slowly, a regulator can only allow of the escape of the heated air. As the water in the tank affects the heat in the egg-chamber more when the animal heat of the chicks is increased, a regulator will not fully serve to prevent changes, but it will make an excellent indicator, as it can be observed from the top of the incubator.

The regulator given is one of the simplest, and can be attached to any hot-water incubator, or may even be attached to a lamp if it is to "trip" or shut down the flame. We are indebted to Mr. J. H. Zeigler, Port Carbon, Pa., for the design.

It is known that water expands with heat and contracts with cold. The parts in the illustration are, therefore, thus explained, and the principle is seen at a glance. A is the tank and B the egg-chamber. C is a tube (may be made of two fruit-cans soldered, or of tin), and D is a float of cork or any light wood. E is a tin tube, one inch in diameter, which goes through the tank and into the egg-chamber; it allows the heated air to escape. Resting on E is a tin cap, F, which rises and falls whenever the lever, R, is affected by the float, D, a movable ball, H, being used to balance the cap, F. At K is shown a half-inch tin tube, which is used only to allow of the escape of air in pouring water into the tank, or it may be used as the water tube. P is a fine wire to which the float is suspended. The dotted lines, T, show how a small rod may be attached for tripping the flame of a lamp, should such an arrangement be preferred. Everything must be well soldered, or leakage will result. M is a stout post of wire or any suitable material. Observe that only the tube, E, enters the egg-chamber. The tin cap, F, must be suspended to the lever, R, and not fastened to it, as the cap



REGULATOR FOR INCUBATOR.

should move and swing. The tube, C, should go down to within one inch of the bottom of the tank. Fill the tank with boiling water, to within half an inch of the top, to allow for expansion.

As the water contracts, the float goes down and brings the tin cap over the tube E, closing it, and when the water expands, the float rises and pushes the cap up. When ready to operate, fill the tank as mentioned, and screw a cap, N, on the tube, K, which confines the air and gives pressure on the water, and the float is regulated by this pressure, first balancing with the ball, H, which enables you to set the incubator to any degree of heat.

LOCATIONS FOR RAISING POULTRY.

A sandy location is best, as it is dry and free from filth. The rains often clean off a sandy soil by carrying the impurities downward. A side hill, the poultry house on the south side, is best, and if possible a shade tree or two should be in the enclosure. However, as the houses can be made warm, and shade provided in several ways, the side hill and trees are not absolutely essential, but a dry location is very important. Dampness in the poultry-yard is the great assistant of roup, and should be avoided. On heavy, clay soil, where the poultryman must build or do without poultry, a drain, made of tile, should be a feature of every yard. There is no cheaper or better method of keeping the fowls in health than by the use of drain-tile, especially where the land is somewhat level. On rolling land, covered ditches may be made, the object being not so much that of carrying off the surplus water from the surface, as to hasten the drying further down; but endeavor, if you can, to get sandy soil.

OIL-CAKE MEAL.

A convenient form of allowing linseed meal to fowls is to procure the pressed oil cake, and feed it by breaking it into small pieces. It can then be scattered, so as to allow each hen to secure a share. It should be given not more than three times a week, as it is fattening, and too much may not be beneficial. At first, feed it sparingly, a gill of the broken cake being sufficient for five hens. It may be increased each week, until as much as a pint may be given to ten hens at a meal. It is an excellent medicine for drooping hens that have been debilitated by lice or bowel disease, and it is also a harmless and nutritious food.

HIGH ROOSTS.

High roosts are an abomination. The large, heavy hens can only reach the high roosts with difficulty, and they are liable to be dislodged from their position, thrown off and injured by the fall. Make the roosts low—a foot from the floor being sufficiently high—and have all the roosts on a level, instead of making them step-like; that is, one higher than the other. Bumble-foot, lameness of the joints and other ailments are often due to high roosts, and it is to their seeking lofty perches that young turkeys are usually affected with swollen feet and legs. It is really doubtful if roosts are at all necessary in a poultry-house, as those who have tried the plan of providing litter for the hens, and cleaning it away daily, report that the hens keep in much better condition, being less liable to draughts of air, and are seldom lame. It is an experiment worthy of a trial, as the removal of the roosts will render the interior of a poultry house more roomy and convenient.

BULKY FOOD.

What the hens should have at this season is more bulky food and less grain. Chopped clover, scalded, is excellent, and so are cooked potatoes and turnips. Even corn fodder, cut very fine and scalded, will be eaten readily by geese and ducks. A big mess of cooked turnips, with a small quantity of bran added, will be found the cheapest and best food for ducks.

MINKS AND HAWKS.

There is no way to avoid loss from minks and hawks, except to protect the chicks and fowls in some manner. The mink usually goes into the poultry house at night, and a pair of them will kill every bird on the roost. The remedy in that case is simple, which is to have no holes large enough for a mink to enter. The poultry-house should be securely closed. The depredations of the hawk may be partially avoided by having loose brush, small coops or other places of refuge for the chicks whenever the hawk puts in an appearance, as the chicks will be warned in time to seek cover, by the cock and also by the hens.

SCRAPINGS FROM THE YARDS.

The scrapings from the yards, that is, the earth that contains decomposed manure, will be found excellent for all kinds of flowers, and to save such material for that purpose will recompense for the work done. Such scrapings do not consist wholly of droppings, for there is always quite a large proportion of the food wasted, when it is fed in troughs, and this food, if of grain, is of itself quite valuable when in the condition as it exists on the top soil. By scraping the yards first and then spading them, the yards will be in better condition for the hens.

THE COMMON DUCK.

There is no profit made on the common puddle duck since the Pekins have been introduced, as the common kind are not only small, but of slow growth. To secure the largest returns from ducks, they must be in the markets at a certain period, and as the common ducks grow too slowly to come in early, they do not bring high prices. The Pekins are the favorite market ducks, and begin to come in about the beginning of May, the choicest weighing five pounds each. Crossing with Pekin drakes has not been satisfactory, the pure breeds giving the best results.

DON'T STUFF THE HENS.

The capacity of a hen is limited. If you clog the machinery it will not work well. If you fill her with food that is unsuitable, she will only store up the surplus, waiting for the substances that are necessary to complete the product, and in so doing she does not lay. Food that is unbalanced will, of course, be readily eaten, but nature cannot be cheated. The excess will be voided and wasted; or if it abounds in the heat-producing element (the cheapest and most easily procured), she has the power to convert it into fat, which is an obstruction to laying; but when her ration is balanced, she is compelled to lay eggs, because she cannot store up a supply in any manner over and above the requisite amount required for the eggs.

TARRED PAPER FOR ROOFING.

In using tarred felt for roofing the poultry-house, it is important that a coating of gas-tar, or some such paint, be applied as soon as the paper is put on. This is a matter frequently neglected, and the consequence is that the paper is more liable to be injured by strong winds. The gas-tar should be applied every six months until the roof is two years old. After that time it will be a thick roof, and as hard as tin, lasting for many years, and effectually keeping out cold and dampness. It only requires a little extra care for the first two years, when it can be left to do service, and it will prove to be as cheap and durable as any roof that can be made.

WHAT IS AN EGG?

An egg is composed of many substances. The fact that a living chick can come forth from it is proof alone that an egg contains the essential elements of bone, blood, flesh, warmth, feathers, and a covering produced from lime. To us they appear as the shell, the white, the yelk and the lining of the shell next the white. The hen cannot produce the white unless the food contains it, for the albumen is a costly substance in all foods. The yelk contains the food of the chick that mostly supplies the warmth, while the phosphates of the bones and the shell of the egg must be derived from the several forms of lime.

DOUBLE-YELK EGGS.

Double-yelk eggs are more numerous in summer than in winter. If you find a large number of eggs of unusual size, some containing double yelks, it indicates that your hens are too fat, and that you are overfeeding. It is not a matter of rejoicing to have hens lay double-yelk eggs, as they will lay but few of them before they will either cease laying or break down with fat, dying suddenly. When in the best condition, the hens lay eggs of normal size, and lay regularly, until they begin to moult or become broody.

TURNIPS FOR DUCKS.

Grow a crop of turnips for ducks, if you intend to raise a large number of ducks. On the large establishments, where hundreds of ducks are raised, the principal food for them is cooked turnips, with a small proportion of ground grain. No crop can be grown to better advantage than turnips, and in no way can turnips be grown so profitably as to feed them to ducks. Ducks and turnips are adjuncts to each other on the duck farms, for without turnips the ducks could not be made to lay so well.

SELLING OLD HENS.

If a hen is old, and has given a good record, do not condemn her too hastily, as sometimes a hen is serviceable until she is six or seven years old. The best guide is the time at which the hens begin to moult. If an old hen begins to moult in July, she will, in all probability, lay as well next winter as she did last. In selling old hens, select those that are overfat and which have ceased to lay, but which show no signs of moulting. Those that are active and lay well may be better for next season than the pullets.

WORKING UP RAW MATERIAL.

The hen is simply a creature adapted to a special purpose. She is an egg-producer—a machine for converting cheap, raw material into a product that is in demand and readily salable. She requires the proper material, however, and the most economical mode of producing eggs through her agency is not to allow her that which is useless, but to supply the elements that can be most easily and cheaply changed from the crude material to the desired product.

CABBAGE FOR HENS.

We do not believe it wise to recommend cabbage in winter, as they are expensive unless far from market, but a head of cabbage, tied to a stake, for the hens to pick will be appreciated by them as a variety, and it serves them from a dietary standpoint. Cabbages have always been regarded as one of the staple foods for poultry in winter, but their use depends on their cost.

THE CHEAPEST FOODS.

The cheapest foods are not always on the farm. The farmer who can buy a cheap article and convert it into a costly one acts on business principles. The hen that does not produce eggs is an incumbrance. The commercial fertilizers are brought on the farm, and by indirect process are sold as meat, milk, butter, grain and garden crops. When crops are sold they carry away the riches of the farm, and the farm would be impoverished if the farmer did not procure fertilizers. He can produce eggs by procuring the substances that are adapted therefore. The meat and bone of the markets, changed and reduced to an available form by processes known to enterprising business men, supply the needed elements that are lacking on the farm. Egg foods should not be composed of substances that cause a temporary increase of production, but should fulfil their objects because they are really *foods*, and provide the material for the eggs.

CHICKS DYING IN THE SHELLS.

MRS. A. S. SMITH, PRINCETON, IND.

I have, since writing my last article to the POULTRY KEEPER, been giving much care and study to this matter, and I think I have evolved another theory which has more weight than the age of the egg, though I believe that this is one element in the trouble. But there is another which I think is greater—the hardness and thickness of the shell. Now for reasons:

In the first place, we all know that a hen stirs her eggs a great deal, if she does her duty, and thus wears off much of the outside of the shell, which is the hardest part of it. There are some kinds of shells that even the hen cannot wear off, and they never hatch. Take notice of an Asiatic egg which is dark brown, with little white specks over it, and you will find it never hatches, though it will start to hatch. Also, you will find that the eggs which have full grown dead chicks are so hard you have to give them a hard knock to break them. I have also noticed that a hen that does not stir her eggs will have more chicks die in the shell than one that wears them off by constant moving. Take the Leghorn, or even the White Java, which lays white shelled eggs, and they will nearly all hatch where the hard yellow shells of the Asiatic will die before pipping the shell. When examining the shells of those set on by hens, I found them much thinner and more brittle than those in the incubator.

The outside coating of an egg is, necessarily, harder than the inner coating next the lining, so as to protect them from breaking. The hen wears most of the hard part away, and this gives the chick an easier job to get out of its prison. I feel convinced, so far as I have studied the matter, that this is the reason for the trouble more than any other.

Now, let our incubator manufacturers go to work and invent some way of wearing off the eggs as the hen does, and I think the trouble will end. Why not tack a cloth loose enough on the egg tray, so the eggs would lie against each other, as they do in the nest, and then draw out the tray and stir them with the hand about three or four times every day, or as often as is practicable, so as not to cool them down too much? I really believe that incubator eggs are kept up to a high temperature too constantly, as we know the hen goes off every day, and almost cools her eggs, and yet she hatches better than we do. I have brought hens in the sitting room, so I could watch them, and they stir their eggs both day and night, frequently. A little Bantam I had so constantly stirred up her eggs that I thought she would have them beaten up ready for cake—but she hatched every egg.

You may notice a young chick just emerged from the shell, and it lies and pants, completely tired out. It takes all the strength they possess to get out, even after the shell is broken. Then what must it require to first break it when it is intact?

When the chick comes to the point where it needs more oxygen than it is getting through the pores of the shell, and it has not strength to break it, then it suffocates. Now, if we can get the shell thin enough for a slight effort to break it, we will succeed better, I am sure. Having as fresh eggs as possible, and then some means of wearing them off, and we will have gone a long step in getting better results. A hen does not stir her eggs so much to turn them over as to wear them off. Often times they are not turned over, but merely moved from one part of the nest to the other, grinding them against each other.

As to cooling off the eggs, I remember of an old man making an incubator and heating it by lamps, and every day he would pull out the egg drawer and cool down to seventy degrees. The thing was such a crude affair that of course I thought he would not get any chicks. He had in it over 100 eggs, and, to my surprise, one day, when I went to see him, he had ninety chicks. A better percentage than I ever got out of the latest improved patent machines. I give these thoughts and suggestions for what they are worth, and hope others will investigate on this line and report results.

[A hen comes off the nest to cool *herself*, not the eggs; much depends on the fertility of the eggs. We fear that if the shells had to be *worn* down by the hen it would require three years, instead of three weeks, to get them thin.—ED.]

SAVED SEVENTY OF THEM.

M. K. BARNUM, N. PLATTE, NEB.

With the assistance of your valuable paper, and some of your specials, I have been able to save seventy chicks out of seventy-two, and all are now doing nicely; while others in town, who have had more practical experience, are losing a great many chicks with bowel disease and lice. One of the two chicks I lost was crop bound, and the other had something of the nature of cholera, although it has not affected any of the others. I gave them a few drops of carbolic acid in their water and feed. I am keeping a careful account of the expenses and receipts of my poultry, and will give you the result later.

[Many chicks may be saved with extra care and attention.—ED.]

RUNNING INCUBATORS.

O. F. FULLER, BLACKSTONE, MASS.

I have only had a little less than one year's experience with artificial poultry raising, although I have raised poultry ever since 1881 by the means of hens. I spent a great deal of time, and got all the information I could about running incubators and brooders. But the most satisfactory way I can run the Monitor (made by A. F. Williams) is as follows:

	Morning		Noon		Night.	
	T	H	T	H	T	H
Wednesday..	..	..	101¼	40..	..	..
Thursday	101	45..	..	..	101½	47
Friday	101	45..	..	..	101½	47
Saturday	102	47..	102	48..	101½	48
Sunday	101½	47..	101½	47..	101½	47
Monday	101½	45..	101½	45..	101½	45
Tuesday	101½	50..	101½	48..	102	48
Wednesd'y	101½	48..	101½	50..	101½	47
Thursday	102	50..	101½	48..	101½	50
Friday	101½	50..	101½	50..	101½	50
Saturday	101½	48..	101½	48..	101½	48
Sunday	101½	47..	101½	47..	101½	47
Monday	102½	50..	101½	50..	102½	50
Tuesday	102½	50..	103	55..	103	55
Wednesd'y	103¼	55..	103¼	55..	103½	55
Thursday	103½	45..	102½	48..	102½	50
Friday	103½	50..	103½	51..	103¼	50
Saturday	102½	51..	102½	50..	102½	52
Sunday	103½	50..	103¼	50..	103¼	50
Monday	102	45..	103¼	45..	103	48
Tuesday	102½	55..	103¼	60..	103	61
Wednesd'y	103	62..	..	..	..	

T—Degree of heat.

H—Degrees of moisture registered by the German Hydrometer.

Put in a little damp sand on 20th day.

Hatched eighty-six chickens from 110 eggs.

By referring to the above table, it will be found that I run as near as I could to 101½ degrees the first part of the hatch, and 102½ or 103 degrees the last part of the hatch. I used no moisture whatever until the 20th day, and that was only a little damp sand. While the chicks were hatching, the hydrometer ran up to sixty-five degrees of moisture. All ventilation was closed up until the last of the hatch, and when the chickens were hatching all ventilators were opened. The eggs were picked up around home at our neighbors. I do not know that this is the proper way to run the machinery, but this way gives me the best satisfaction. I do not believe that Mr. Jacobs, or any other person, can tell any one just how to run an incubator. A great many people expect too much from machines. They imagine all they have to do is to fill an incubator full of eggs, and keep the lamp filled, and in three weeks have a machine full of chicks. They do not stop to think what a good hatch is. Suppose we set fifteen hens with thirteen eggs each—a total of 195 eggs—and each of the hens hatch eight chicks, a total of 120 chicks, we reason we are doing well. But when we set 200 or 300 eggs in an incubator they almost look for every egg to hatch. I ran an incubator by certain directions and only hatched thirty per cent., and I changed the plan of running and got seventy-five per cent. This proves to me that certain directions may be all right for one location and all wrong for another.

I have come to the conclusion that a thick-shelled egg cannot be hatched successfully in the same machine with a Leghorn egg. I believe, by the experiments I have made, that a Leghorn egg requires less heat and moisture than a Brahma egg, although I am now hatching Brahma and Leghorn eggs in the same machine quite successfully. A setting hen placed on a hydrometer varies from forty-five to fifty-five degrees moisture, according to my experiment, before any eggs were placed under her, and that shows that the humidity of the body of different hens are not alike. I would advise any one who thinks of purchasing an incubator, to buy the simplest regulating one they can find. Get your machine six months before you want it, and become thoroughly acquainted with it.

[The above letter is one that we endorse fully, and in every respect.—ED.]

HOW HE GAINED HIS KNOWLEDGE.

W. A. ATKINS, LONDON, NEB.

Your valuable paper comes regularly, and is always a source of much pleasure to me. Through its columns I have gained all the chicken knowledge I possess. I am just getting started in the business. My experience with the incubator is much the same as others, in regard to chicks dying in the shells. There is one thing I find that is necessary—the incubator must be as level as possible, otherwise the heat will rise to the highest point. I am trying some experiments on my incubators, and if successful I shall report to the POULTRY KEEPER. I enjoy reading others' experience; it is, indeed, a pleasure. I was somewhat surprised when I read Mr. F. O. Burrows' article in the June issue, stating that he had used no moisture, neither turned the eggs. Ida E. Tilson says "the hen must"; I suppose, then, the eggs must, too.

This reminds me of an incident that happened at our old home in "Old Kentuck." My father purchased two dozen eggs and set them on the top of the safe for breakfast. The next morning, when mother went to get the eggs to prepare them for breakfast, low, and behold! there was a nice little chick hatched out, and another pipped.

Long live the POULTRY KEEPER.

HE WAS DETERMINED TO GET THERE.

D. J. FOLK, LEIPSIC, OHIO.

I have been reading your valuable paper for six months, and during that time I have had some experience which the readers of your paper might profit by. I started my first incubator last December. I thought I could learn the business in a short time, but, alas, I was greatly mistaken. I purchased a two hundred egg capacity, filled the machine with eggs and run it as per directions. My first hatch came off on New Year's Day—125 as pretty, downy, little chicks as could be. I bought a 200-chick capacity brooder, put the little fellows in it, and all went well the first two weeks, when, on opening the brooder to let them out in the run for feed, not more than one-half could get out. Such a sickly lot I never saw—fifteen were dead. I had been away the day before, and my wife being out of corn bread, had made a cake out of middlings, and, as it was of a sticky nature, the above result followed.

As I had the only hatcher in our neighborhood, I was expecting visitors to see these wonderful chicks. So I cleaned up the brooder, chopped up a whole head of cabbage very fine, and gave them all they could eat. By noon they were all right, as lively as ever. All went well until my next hatch came off, when I was under the necessity of making more brooder room. My real work was just beginning. I only got eighty chicks from the next hatch, but as the tank sprung a leak, I attributed it to that. Having my second brooder ready, I cleaned out the machine and filled again, after repairing the tank. I was so enthusiastic over the first hatch that I had another machine on hand and filled both for my third round. I used a dry cellar to do my hatching in. The weather was cold, and I was using ten gallons of oil at a hatch, with each machine. But as I had to depend on my neighbors for eggs, my troubles were only beginning. This time I only got forty-three chicks from both machines. I kept reading everything I could about hatching and feeding, but with all I could do the chicks would die one by one. So I concluded to ship what I had of the first hatch, which amounted to four dozen, and for which I received $3.00 per dozen, just enough to pay for my first brooder. Just a little encouraged, I filled one with duck eggs and the other with chicken eggs, having a few chicks to break the monotony. I was bound to succeed. After the machine had been running fifteen days, a three days' rain set in, and, the cellar door being left open, the water ran in and stood some two inches under the incubators. I just digested the moisture question, and hoped this water would supply the needed moisture, as they were nearing the end of the hatch, and of course needed more moisture. But my hopes were in vain, for I only got twenty ducks and fourteen chicks. Determined to succeed I filled again, but with worse results than before, for I had been trying to hatch last summer's packed eggs, as I afterwards learned. Matters began to look dark on the profit side of the ledger.

I have not told all of my troubles, for you know them all if you are in the business. I hated the very sight of those two incubators, so I sold them for what I gave for them, throwing in a brooder, and went on a trip to air myself. I visited a poultry farm and got some new ideas. Then I purchased two dandy incubators and six brooders, and shipping my remaining broilers (two dozen) I started out to succeed. I am running the machines in an upper room, and am having the best of luck. Four hundred chicks I can hear from my desk calling for their supper. With the outfit I now have on hand, I shall keep on until I find out that I know at least a little about raising chickens.

BELIEVES IN MOISTURE.

MRS. E. H. WILSON, BELOIT, WIS.

I have just read F. O. Burrows' experience. I think that may be taken with a grain of salt. However, I was never so anxious about anything in all my life as I am about knowing the history of those chicks. "F. O. B." had better tell the whole story, and ease the minds of many. Tell what kind of incubator used, number of eggs, how many chicks, etc. I have been using the Poultry Keeper Incubators for several years, and have yet to learn that chicks will hatch without moisture. Twice, through a mistake, the sponges became dry, and every blessed chick died that had made an opening in the shell, the inner skin becoming so dry and hard that they were unable to pick their way out. I have filled the old hot water boxes a goodly number of times with eggs of all kinds, and have yet to be disappointed in the hatch, excepting the times mentioned, and I have good success in raising the chicks. Perhaps F. O. B. is one of the sterner sex, and can accomplish impossibilities; that is, what is impossible for any of the "wimmen folks."

Now, Mr. Editor, if you can, and will, find out the method of hatching chicks with very little, if any trouble. I am sure that the "wimmen folks" who read your excellent paper will be your firm friends henceforth and forever. Yours, with a troubled mind.

If you believe that a silver dollar is worth only sixty-four cents, just send them to us. We will *redeem* every one at a hundred cents, in subscriptions. Try it.

HOW TO HATCH AND RAISE THEM.

W. J. GUDRIDGE, WHEELER, IND.

Some time ago, if you remember, I wrote you regarding incubator chickens, and what commission men said about them, and since then we have started in the business, and have hatched and are raising some hundreds, and as yet have failed to find either a "camel" or a "dromedary."

I have two machines running all the time, and have hatches varying from fifty to eighty-four per cent. The first hatches met with hard luck, but now, by observation and close attention, am enabled to rais nearly all. We purchased a new machine (I will not give name), all the latest improvements, etc. Well, sir, the first time I ran it, I did so right up to the notch. The temperature varied no more than five degrees the entire time, and, according to instructions, the egg chamber was not to be opened until all were hatched, and temperature kept at 105 degrees during the period of hatching. I did as instructed, and got seventy-four per cent., but in less than a month had not a mother's son left. At that time I ran across an article in the KEEPER, by a Mr. Campbell, regarding the temperature when the chicks were coming out of the shells. His observations and my experiences since are exactly alike. I have kept the egg chamber at from 100 to 102 degrees, and the little fellows have been very healthy after leaving the incubator.

I made brooders, something after the plan given by Mr. Palmer, in your brooder number, and they work first class. Regarding the brooding of little chicks, I find the following plan works like a charm with me: The chicks remain in the brooders and house until nearly feathered, when I shut off the lamp, but allow them to brood inside just the same (they are allowed the use of small yards outdoors). After three or four days of cooling off, I transfer them to small houses, after the colony plan, and place them over a small field, and let them run all they want to, and they just enjoy themselves, and grow.

Last winter I had to fight roup all the time, and this spring Mr. Louse and family, also. Roup I mastered with spongia, while gas-house tar paralyzed the visitors.

Broilers for the Chicago market must be at least two pounds this year, that weight bringing from seven to eight dollars a dozen. The day after Decoration Day, the market was loaded with chicks less than one and a half pounds, while dozens did not weigh one pound. Such stock as that brought about three dollars a dozen, and a drug at that.

I like the Plymouth Rock best. I do not think it can be beaten as an all-round fowl. It certainly is the best seller over the counter. That I know from personal experience. Next year I hope to have nothing but that breed on the place.

I can safely say we are in the business to stay; if we clear expenses the first year we will be satisfied. It takes time to get the hang and run of things pertaining to chickens, and experience is better than books.

HERNIA AND LEG WEAKNESS.

J. R., MARYLAND, N. Y.

We had two cases of the former, and one, we think, of the latter, and being able to cure them we wish to tell how we were able to do so. One night we found a hen with an exceedingly bad rupture and bleeding, and it being a favorite fowl we thought we would try our luck, knowing we had succeeded in curing similar cases, although this was the worst case we ever saw. We procured some alum, made a strong solution, and washed the parts. Then we got some alcohol, and, after using a few drops, we again put on some of the alum water and placed the parts in their proper position, using a soft cloth and the finger. After some days we succeeded in keeping the parts in their place. We kept the hen alone, and used the alum and alcohol twice a day until we succeeded. We also gave, once or twice a day, a little morphine in water, which is quieting to the parts afflicted. We have just been treating a Black Minorca the same way, and to-night find her all right, except some inflammation. A diarrhœa seems to accompany this, the excretions adhering to the parts, but in most cases this seems to clear itself. I hope those who have similar trouble will try my plan and report.

I saw by the POULTRY KEEPER that quinine was good for leg weakness, and as I had a case of a Plymouth Rock hen I put her by herself, giving the quinine and condition powders, and she now seems as well as any of them. The cause may have been in the back, but we thought it to be in the legs. We think this the first case we ever cured, but we did not wait until she was clear down.

Will the editor please to tell us if it was alum, and how much, that was mentioned in a number of the POULTRY KEEPER some time last fall? It was a cure for fowls running backward, and appeared in the righthand column of the righthand page in one of the autumn editions.

[We are unable to find the item alluded to, or we would cheerfully reproduce it.—ED.]

RUB a little sweet oil on the heads of your hens. You will be surprised at the result. It is now the remedy for nearly all the diseases of this season.

SCORING THE STANDARD.

THEO. STERNBERG, ELLSWORTH, KANS.

In the June issue of the POULTRY KEEPER is a very considerate and well written article by Mr. Cole. I do not mean this as a reply to him, but it has occurred to me that a few thoughts which are suggested by his article would not be out of place. Egg production, and the meat supply derived from poultry, cannot receive any light from a study of the Standard, or a perusal of all the score cards under the sun. The Standard only gives, or pretends to give, the points and requirements of poultry as a fine art—or "fancy poultry." The Standard does, or should, describe in detail the most beautiful of each breed therein described From what source are the Standard descriptions derived? Certainly all of it, which is of any value, must be, and is, the written descriptions of what already existed in fowls. That is to say, the Standard should describe the shape and color of the best parts of many fowls, as no fowl can be perfect in each and every part. The Standard should be made up by the description of the perfect part of many fowls. One is perfect in the head, and its written description is the Standard head; another is perfect in color of neck, and its written description is used for the Standard in that respect, and so on. If any portion of the Standard is absolutely ideal; that is, nothing in nature exists as its model, then to that extent the Standard is false and misleading, and of no value.

The object of a Standard is to describe the greatest possible beauty for the breed under description. If you find a fowl, which, while not conforming to the Standard description of the same breed, is yet more beautiful than one which does conform quite nearly to the Standard description, then you have a case where the Standard is wrong and the written description should be changed to that of the most beautiful. The Standard, then, so far as it is, or can be, a guide or rule, is so to the extent, and no more, that it truthfully describes nature's best work in actual existing fowls. It is but a translation—a good or bad translation—as the qualifications of the translator happens to be.

A genuine student who wishes to know, feel and appreciate Homer's Iliad, would at once learn the Greek language in which Homer's poem is written. He would study the poem, not in English translations, but in the original. He would not be bound by translations. The earnest searcher after the truths of the Bible will study it in the original Greek or Hebrew. He does not content himself with translations of translators. So in the study of fowls. The original book is the fowl itself. If every copy of the Standard were destroyed, it could be again reproduced as was the first one by re-writing the descriptions from the original text, the fowl itself. Any real investigator who will take any one breed and for several years carefully study it, will find, as his knowledge of that breed increases, that there are very many errors in the Standard's translation. He will come to regard the Standard as a useful aid in the study of fowls, but one not always to be depended upon. He will come to regard the scale of points with supreme contempt. Mr. Cole says he can select the fowl which to him is the most beautiful. That is all anyone can do. If he understands the written descriptions in his Standard, he can certainly take his fowl and see if it, in a general way, answers that description. If it does, and he has several which also conform to the written description, then the most beautiful is the best. It is not only the best, but it should be so decided by a poultry judge. Any award of prizes in a class which gives the prize to a bird other than the most beautiful in its class, is erroneous and an outrage upon good taste, and in defiance of the chief end and object of all breeding of fancy poultry (as distinguished from market poultry), which is the perfection of beauty in fowls. Any system or application of it by which the most beautiful fowl is beaten, does not aid in the spread of the fancy and does not increase sales.

One of the errors an investigating mind will soon discover in the Standard, is that its originators have to some extent, tried to make a "volapuk" language of it, to harmonize all the breeds from the Asiatic down through the list to the tiny bantam; to string them all on one string like buttons. Starting with the noble Light Brahma, all down the list the flavor of the Light Brahma is to be found It is in this idea of a harmonious whole, where each breed bears some relation to every other breed, which is the chief source of the numerous mistranslations and errors in the Standard. We want no "volapuk." Each distinct breed is a whole, in and of itself, and its Standard should be written without regard to that of any other fowl. If this were done, if each breed were judged by one who knows that breed, then the awards would be as correct as human nature can be, and when Mr. Cole picks out his most beautiful fowl, he will find the judge selecting the same one as the best. This will be the universal rule. There will be no more misleading and deceptive cards used. The day will be ended when a class of judges, who cannot score the same fowl at the same show twice alike, can have any influence. It is not so much the fault of the judges as men, but it is the fault of a so called system which is not based upon any law of logic, of nature, or of science. What would one think of a so-called rule in ordinary arithmetic which brought a different answer to the same example every time it was applied? Would it be called an educator? Would a study of it educate? Would it be a rule?

But in this score card business, men, who in every other affair of life demand rules which can be applied with uniformity, can be found upholding a pretended system which is not capable of exact or logical results. To the novice I say, study your fowls, read your Standard, study your fowls, and if you can learn, then you will learn, but on no account omit to study the original, the fowl. To the one who thinks himself an expert, I say, keep studying the fowls. Cultivate your taste for beauty in the fowl of your choice. Then in time you can write Standards. But what do the disciples of the score card system care, after all, for logic or reason? The score card is a system not of determining merit, but for making sales. Therefore, only the *appearance* of exactness is required, not *actual* exactness. But I am free to say that in my opinion, so far as sales are concerned, more will be made at better prices by the advancing of the interest in the breeding of fancy fowls along lines which are rational and easily comprehended by all intelligent minds. That it checks the spread of genuine interest in the rearing of fancy fowls, to see a so-called system of awarding prizes and of making sales in vogue, which is not, and cannot be comprehended by the ordinary mind, and which is not comprehended even by the so called judges of the pretended system. A system which is one only of appearances, not of facts. In awarding prizes at a show, a judge who knows the breed he is judging, can, with the eye, tell the best according to his judgment then and there present. This is all mortal man can do. This is the natural, the rational plan. It is the plan every student of fowls uses in his own yards, and the rule under which the best in a yard can be and is selected will work the same in the show room.

What the fancy wants is judges expert in certain breeds. Men of liberal thought, broad men. It is in this line that the breeders of fancy fowls should try to progress. In local shows, let the best qualified local breeder judge the breed he is familiar with. If the best qualified local breeder wishes to exhibit, then invite the nearest qualified breeder from an adjoining locality to do your judging. But this is a postulate; in fowls, as in everything else, the "Jack of all trades is master in none." The man who claims to be an expert in all breeds at once indicates to the intelligent mind that his gall is doing duty in the place of brains, and yet under this so-called system of the score card, and the professional all-round judges. It is logical and necessary to teach the superiority of the "Jack of all breeds" to the devoted breeder and student of one breed. To admit for one moment that special knowledge of any one breed is possible or useful, is to destroy the score card and all-round professional judge fabric. The fallacies of the score card system, when attempted to be applied, has led to the most amusing inconsistencies in its defense. When values are to be determined by the total on the score card, then the card should be able to last, as a so-called record, a reasonable time. A fully grown out fowl, in usual health, should not vary in its score from day to day, or from judge to judge, in any marked degree; if it does, and we all know that no two scores of the same fowl, by the same or different judges are alike in sections cut, or in total outs, then, as a record of value from which to fix prices, it does not fix rules for any time but the hour the score is made. It won't do for the next day, or the next week, for, say the card experts, the fowls vary. (It is never the judge or the system which is at fault with them.) Then this so-called record is not a record which truly records anything by which actual values can be fixed, and, as a measure of values, is a delusion. It is a fraud.

When two judges have succeeded in scoring the same fowl alike in total outs it is regarded as so wonderful a performance that it is widely published all over the land. This fact of the rare instances of scoring alike is proof not of the application of a system which produces uniform results, but is only proof that they have, for a wonder, guessed alike. Breeders and lovers of fine fowls need to cease following an unreal, an artificial system, one which in its application is as uncertain as the weather, but all should try to progress as rapidly as possible on the lines of the real. This will be rapid as soon as the fancy pays more attention to nature and natural methods, when they study fowls more and score cards less. The whole apparent end and object of score cards and professional all-round judges is to build up a business in professional judging. When the fancy is deluded into the belief that awards, sales, the whole business can only be conducted properly under the domination of the professional judge by his methods, which are not understood by the uninitiated. Then we shall have a trust or combine in and amongst the poultry fancy. I do not mean to say that such things now exist, but the thing is possible, and what leads me to make the above remarks is a quite recent proposition made to me. I received a letter in which it was deliberately proposed to me, at a salary of $1,000 or more a year, to become manager of a poultry enterprise, the name of the business to be my name; that stock would be quietly given to certain poultry judges, who were to share the profits, but not to be known as having an interest, and profits galore were promised me. I do not know of, nor do I believe that any poultry judge would go into any such a scheme. I only mention it to show that already some men have reasoned along that line.

We find combinations are made in other businesses. We all know of local political rings for the purpose of controlling the profits of the public business. This seems to be an age of trusts and combinations. Horse races are run on agreed plans. Even base ball is largely hippodrome work; prize fights are fakes to mulch the foolish bettors, and it would be a wonder if the poultry business of the country should be altogether free from the prevailing evil of the age. If combines or trusts are ever made, or to be made, in the business (not of breeding, but of selling fancy poultry), the score card system is the one which will be employed "in selling the public," for it is such a good thing "to sell by." This thing is clear to me, that following after what we all know as a "political machine," the leading score card advocates are trying to construct a score card machine. In fact, we are to have, as most localities have, two machines, a Standard and a decimal machine.

READ YOUR PAPER.

EDWARD T. BUTLER, BELLEFONTAINE, O.

I have been a faithful reader of the POULTRY KEEPER for several years, and am always ready for the "next," never failing to learn something new from each issue. When reading each number, I invariably find myself asking the question, "Why will so many rush into print to find out things one's own judgment ought to tell them?" I think, above all things, in the poultry business, strict attention, with a share of common sense, will do more towards raising your chicks and keeping the mother hen healthy, than to write the editor and then wait a month in order to find out what to do for "one of my hens that is sick."

I have been raising chickens for about four years (not on a large scale, as I only have a town lot), and in that time the chickens I have lost—including incubator hatched chicks, old hens and all—could be counted on my two hands. The only authority I have ever had has been the POULTRY KEEPER, which, I think, as the Irishman said, is "getting better every day, every day!"

There are several questions I feel especially interested in, and among them I name moisture in incubator, and ventilation in poultry houses. My flock the past winter was small ten hens and one cock (Buff Cochins), and from my birds I got seven and one-third dozen eggs in January, when the average temperature was below zero, while some of my friends, with Leghorns and other breeds, received no eggs whatever.

I do not think I am "smarter than anybody," nor authority, but I do think if one studies the POULTRY KEEPER, and uses judgment, he can work wonders.

THAT BUTTER AND EGG ARTICLE.

P. G. ESTEE, AMIRET, MINN.

In the June POULTRY KEEPER, Mr. Cheeseman finds fault with my article on the relative value of cows and hens (which appeared in the April number). Mr. Cheeseman, you are not a careful reader. Please read my article over, and note that each cow receives a pail of feed night and morning, making the cost of ground corn and barley seventy-five cents for twelve pails of feed each day. Oats sell for about twenty cents a bushel, corn forty, and barley about thirty-five cents. The fowl's feed is not placed at any lower estimate than the cows' feed. The value of the cows' feed is not less than seventy-five cents, for twelve pails of ground feed contains about a bushel of barley and a bushel of corn. As to the hay, you have not had much experience with cattle or you would call twenty-five cents per day a cheap estimate for six cows, especially in winter, when the stock is shut up all the time. The mash is given at just what it costs. I advise you to read more carefully the next time. Where did you get your two pail idea?

QUEER CASE OF A HEN.

MRS. FRANK SANDERS, BIRMINGHAM, ALA.

I want to write about a queer case of a hen, as much for information for myself as for other readers: Yesterday I went out where I had nine setting hens and found one lying over on her side, off of the eggs. I thought probably she wanted to cool herself, as it was a hot day. I tried to set her up again, but she would fall back. Presently she began kicking and flopping, seeming to have a fit. I took her out and put her on the ground, but she could not stand, or raise her head; it was drawn around against her back. She kept trying to peck, and made a queer noise. The head and neck got very hot, so that the feathers would come out very easily. The crop was full. Where the hens were setting it is very cool, being on the north side of the barn. This morning I found the hen dead, as I expected. My hens are doing splendid laying, and I am raising good chicks.

[Your hen probably was attacked by vertigo, caused by a rush of blood to the head.—ED.]

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Early Laying.—On the 22d of November, 1892, I had a hatch from eggs I purchased from a dealer. I disposed of all the chicks at forty cents each, except four pullets and a cockerel. The cockerel has done service, and to-day one of the pullets began laying. This seems a little remarkable to me, as they seem to be common fowls. I have adhered, however, to the POULTRY KEEPER ideas of feeding; perhaps this has something to do with it.—*P. C. Buttorff, Nashville, Tenn.*

Poultry on a City Lot.—I have sixty-nine chicks, from two weeks to six weeks old; six hens sitting; and twenty-two pullets and one cock about a year old, all on a lot 12x26 feet, and all are doing well. This is not in keeping with the POULTRY KEEPERS' instructions, but I am trying to raise all I can with a view of moving to the country in the fall. I got 677 eggs from January 1st to May 1st.—*Samuel G. Harris, Atlantic City, N. J.*

Natural Gas for Brooding.—Would the POULTRY KEEPER like to know how we brood and raise chickens by natural gas? We have over 200 chicks, and some will weigh one and three quarters pounds, brooded by natural gas. We have only lost five or six, and one of these by accident. We never see anything about the Indiana Gas Belt.—*L. F. Miller, Gaston, Ind.* (We will be pleased to hear from you.—EDITOR.)

Fowls for Cold Weather.—My Dark Brahmas fifty in all, did remarkably well for such a cold winter. I never missed a day getting eggs all winter, and have hatched during March and April 250 chicks, by the hens. Although the weather was very bad, so much rain, I have lost but few. The lice were very bad, but I greased the chicks on the top of the head and under the throat every two weeks, and find it the best preventive. I use insect powder on the hens. I feed cornmeal, wet with milk and water, with a little pinch of salt, to the chicks, and have no trouble to raise them, although I see some condemn that feed. Both the old and young have milk before them all the time, and they seem to prefer it to water.—*J. T. Vance, Peoria, Ill.*

Millet Seed.—I notice several articles on millet seed for chicks. I feed it with good success, by scattering it among the litter, and the chicks seem to enjoy scratching for it. I am using two reliable incubators, and they work fine. I think the May number is a prize winner.—*C. H. Elmore, Beatrice, Neb.*

Good for a Start.—I have just made an incubator, in which I put fifty eggs, and got out thirty nice chicks. I think that is doing well for the first time.—*C. W. Emery, Potsdam, N. Y.*

Setting Turkeys.—Last year I learned a new wrinkle in setting turkeys. They often make their nests away from the house, which are destroyed by some animals. When a turkey is broody I lay an old barrel on its side and make a nest in it. I place a few hens' eggs in the nest, drive a stake in the front of the nest, tie a string fast to it, and to the turkey's leg. In a few days she will take to the nest, and can be given her own eggs.—*Hannah W. Williams, Springville, Iowa.*

A Good Beginning.—Last January I built an incubator after your plans, and hatched, on March 12th, fifty-six chicks from eighty-nine good eggs. I am very well satisfied with it.—*J. B. Welch, Tacoma, Wash.*

Dead in the Shell.—Will some reader of the POULTRY KEEPER tell me how I can avoid having so many dead chicks in the shell? Although they are full sized they never pip the shell. First, I was told to put in moisture after the third day, but I lost a good many that way. Then I was told to leave out moisture until after the 18th day, but that worked worse yet. There are air vents in the bottom of my machine. In the first instance I left them open, and in the second I was told to close them Out of 850 eggs I have only 300 chicks. The eggs I get when I set under hens hatch out nearly every one. Can some one tell me how it is?—*E. J. Lozier, Tarrytown, N. Y.* [The matter has been discussed in our three previous issues. You should have the Oct. 1892, issue.]

Keeping Hens Healthy.—To keep my hens healthy I give them plenty of good sour milk, and about once a week I put in the milk a little baking soda, and stir it until it foams. I also keep old plaster before them all the time. If I couldn't get the plaster I would mix lime and sand together, the same as for use. I get a good many hints from your paper.—*H. Van Lew, Indianola, Iowa.*

Best in the World.—We own a valuable quarter section of land joining the town of Clifton, and knowing the great profit there is in poultry, have concluded to engage in the poultry business quite extensively. We will also keep Jersey cows and fine hogs. We have a most desirable place for the business, having fine springs, and abund-

ance of shade. I think your poultry paper gives the best satisfaction of any poultry paper in the world. From it we get the knowledge from all the people in the United States and Canada. It is worth fifty cents a copy to any one who anticipates the raising of poultry. When I hear of any one raising poultry, the first question I ask them is, "Do you take P. H. Jacobs' poultry paper?" If he says "No," I give him the address, and tell him he cannot make a sueeess without it. Every one should support a good cause, and your paper eertainly is one.—*A. Jacobs, Clifton, Oklahoma.*

Incubator Hatched Chicks.—I have just finished reading an article in the POULTRY KEEPER by a person who seemed to think that chickens hatched in an incubator were not as good as those hatched by a hen. I will give you a few facts as I have found them. I hatched some ordinary chicks in an incubator about January 7th, and in exactly four months and fourteen days afterwards some of them were laying, and are still doing so. I cannot explain it, but I have pullets, hatched by hens, that reached the age of nine months before laying. I find many valuable hints in your paper.—*Frank J. Parsons, Belmar, N. J.*

Within the Reach of All.—I have had the paper for one year, am well pleased with it, and think the table of contents quite an improvement. I am glad the paper is kept at a price the common class of people can reach, contrary to the advice of a few subscribers. I see that some Minnesota reader would like to advise the editor what he should or should not put in his paper. He would profit by reading what Horace Greely knew about farming, and learn when is the best time of the year to husk the pumpkins, thrash the potatoes, and dig his corn.—*J. B. Welch, Tacoma, Wash.*

Fed Salt by Mistake.—I have fed my fowls salt meat and fish after soaking till the salt was dissolved, and it made them lay. I always was careful about raw salt. I take very good care of my chickens and they pay well for everything. They have free range, fresh spring water, grass and gravel, large houses, and everything they need. I have never yet had any kind of disease among my poultry. Six years ago I had a flock of ducks, about forty ready to send to market. They were fed on shorts and chops mostly. One day I cut a new sack of chops and gave them a mess. In the evening they were all sick, and would not eat any more. It acted the same on the hens. I lost thirty-five ducks, two geese, and one hen, and they all died within one day. I think the chops was mixed with salt, which killed the ducks.—*Mrs. L. Schmidt, Oak Point, Wash.*

Feed for Fifty Hens.—I have been having such good success with my poultry that I will give my plan for feeding fifty hens: I take two quarts of wheat bran, two quarts middlings, one quart desiccated fish, and stir up with cold water in summer and hot water in winter. I add one tablespoonful of black pepper two or three times a week At night I feed whole grain; one night wheat, the next night oats, the next buckwheat, then barley; about four quarts to a mess. A good way is to mix them together. In the winter I heat the grain. When I can, I boil small potatoes for them, and make their morning feed half chopped potatoes. My hens are White Leghorn, and each lays an egg nearly every day.—*E. B. Range, Rush, N. Y.*

Hatching Fractured Eggs.—Some of your readers may feel interested in the result of an accident, by which in turning the eggs (after being in the incubator for about two weeks) twenty-seven eggs rolled out on the the floor. Some were smashed, others badly broken, and some simply fractured. As the latter did not exude any of the contents, we tried the experiment of covering the fracture with mucilage and tissue paper, and returned them to the incubator. To our surprise, we hatched five healthy chicks from these eggs (ten in number).—*Joshua Fletcher, New York City.*

Keeping Fowls in Condition.—I see by the POULTRY KEEPER, that a great many of the readers have chickens sick with the roup. I think it is mostly their own fault as neglect is the general cause of most of this disease. I have not had a sick or droopy chicken in my flock for a year, and I think their condition is due to the care they receive. I feed whole grain, and give them a free range in dry weather When it rains I keep them in the house. I only feed soft feed once a week, and then only give a little red pepper. I get lots of eggs, and when I set them I get good vigorous chicks from them. Good feed and a little care in bad weather will give less roup among the flocks. I find that a dust box, filled with coal ashes, sifted, is a remedy that does not fail to keep chickens free from lice.—*C. A. Theiman, N. Amherst, Ohio.*

Eggs a Specialty.—Keeping hens for eggs is my specialty. I have the White Minorcas, which I think are the best for laying large eggs and many of them. I also have the S. C. B. Leghorns; my breeding pen consists of twenty hens, which layed thirty-one and one-half dozen in five weeks, an average of about ten eggs a day. My house is divided into four pens, each pen holding twenty-five fowls. These pens are 10x10 feet, which leaves an entry two feet wide, and I have two-inch pipes running through this, which keeps the temperature between fifty and sixty degrees. I have four doors, one at each end of the entry, and two at the north side, and on the south side I have two feet of glass, which I take out in summer.—*Adam B. Vogel, Neffsville, Pa.*

Carbon Di-Sulphide—Gapes.—I have little faith in the evaporation of this liquid driving away lice. I placed a bottle containing about three ounces of the liquid in a nest that was overrun with mites. They congregated by millions on the sides of the bottle, held a council of war, and decided to stay. One or two ounces of crude carbolic acid, well mixed in a pail of good white wash, and well applied, will se tle them. Plenty of dry, air-slaked lime, placed in a dry brooder or roosting box, will prevent and cure gapes. Try it.—*O. P. Phillips, Amo, Indiana.*

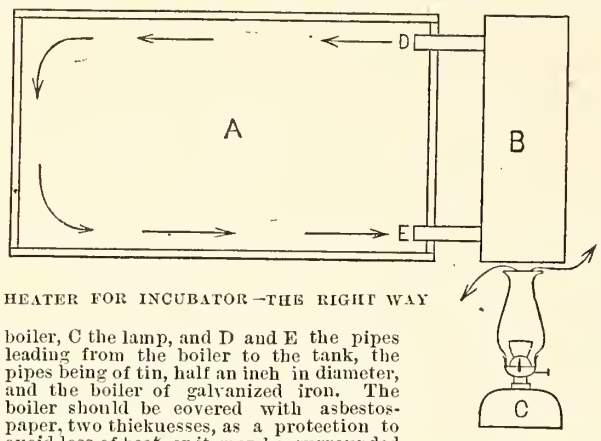
HOMŒOPATHIC TREATMENT.

A. A. HAMILTON, WEBB CITY, MO.

I find you have made use of my hastily written article in your June issue. In suggesting the use of the 200th or "CC" potency, I do not wish to be understood as confining myself to that potentiation. If I can get a clear picture of the case I seldom use lower than the 10.0th (1 m) and up to the "C M." Please correct the address. I am pretty sure I did not write it Webster City, and some may loose time by so mailing.

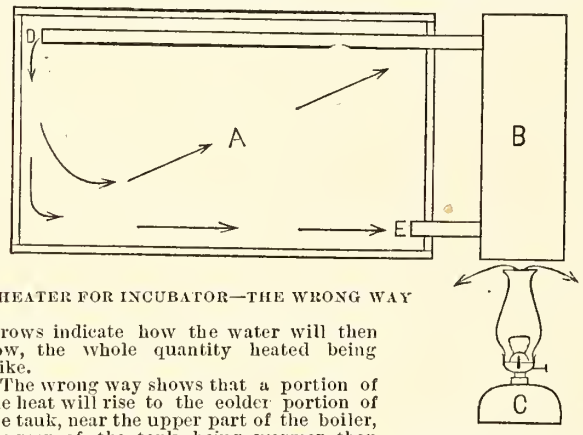
HEATER FOR INCUBATOR.

When an incubator is heated by attaching a small boiler to a tank, using a lamp, an important point is uniform temperature in all parts of the egg-drawer and the proper circulation of those who are using hot-water incubators, and who wish to attach a lamp boiler, we illustrate how to avoid a mistake in attaching the boiler. In the illustration, A is the tank, filled with water, B the boiler, C the lamp, and D and E the pipes leading from the boiler to the tank, the pipes being of tin, half an inch in diameter, and the boiler of galvanized iron. The boiler should be covered with asbestos-paper, two thicknesses, as a protection to avoid loss of heat, or it may be surrounded by an iron jacket, an inch larger in diameter than the tank, the space being filled with dry plaster.



HEATER FOR INCUBATOR—THE RIGHT WAY

The right way to secure uniform heat is to have the pipes of equal length. The arrows indicate how the water will then flow, the whole quantity heated being alike.



HEATER FOR INCUBATOR—THE WRONG WAY

The wrong way shows that a portion of the heat will rise to the colder portion of the tank, near the upper part of the boiler, the rear of the tank being warmer than the front, and the circulation sluggish.

It may be mentioned that the methods have both been thoroughly tried and tested, and are here given for the benefit of those interested in heating with lamps. It may be also stated, however, that we believe the most satisfactory results will be obtained if lamps are not used at all, as the boiling water, poured into the tank, will retain the heat for twelve hours or more with little or no change of temperature.

TURPENTINE FOR ROUP.

Experiments made show that the germs of roup are destroyed when brought in contact with spirits of turpentine. Turpentine, however, is a severe dose to give, even if effectual, and if too much is given it may do damage of itself. To properly prepare it, mix one part spirits of turpentine, one part kerosene and three parts glycerine in a sewing-machine oil-can, and always shake well before using. With the point of the oil-can force three drops of the mixture in each nostril and five or six drops down the throat of the fowl twice a day. Roup is a disease that is almost incurable, being contagious, and gradually exhausts the bird instead of causing instant death. If it appears in the entire flock, the labor of handling the sick birds is often more than the value of the flock; and as roup cannot well be treated on the wholesale plan (that is, without handling the fowls), it is cheaper to clean them out, burn the carcasses, thoroughly disinfect and begin anew. The buildings should be very warm and dry.

BREEDING DUCKS.

It is too late to hatch ducklings with profit, and as soon as the old stock have ceased to lay, the flock should be reduced to a minimum. We believe old ducks to be much better than these that are young, if intended for breeding purposes, as they will lay more eggs and produce stronger young than the younger ducks; but the drakes may not be over one year old. Hence, send all the old drakes to market as soon as it can profitably be done.

EGGS AND THE SITTING HEN.

A common result of poultry-keeping is to throw the delicate egg-producing mechanism out of gear. Eggs are produced from what is called surplus food; that is, food beyond that needed for the sustenance of the fowl. Some people, knowing this, overfeed their birds, while others keep them barely alive and wonder why they get no eggs.

Excess of certain foods causes the ova to be produced too rapidly. In the natural course of events, only one ovum should be produced in twenty-four hours and for five or six successive days. If two ova are produced in one day of twenty-four hours, various eccentricities result. Sometimes two pass into the oviduct together and a double-yelked egg results. Occasionally two perfect chickens may be hatched from one of these, but usually only one. Sometimes the one is possessed of abnormal parts, as a surplus of legs or wings. Another irregularity from the same cause is the production of one egg within another. The oviduct being irritated, contracting in front of the perfectly formed egg instead of behind it, forced it back until it met another yelk, when the two joined company and passed down the oviduct together.

Soft eggs result from too fattening food and too little exercise, the ovum passing down the oviduct too rapidly for the secretions to be made. None of these irregularities are to be met with in wild birds, and in others only when kept in confinement and overfed. There are no functions which suffer so much from confinement as those pertaining to the production of eggs. A hen that has begun to lay will go on until the whole clutch has been completed, even though the conditions of its existence are changed in the meantime. This is why hens kept in small quarters, as in city yards, will lay one season and then cease. Those who can only afford such accommodations should get pullets just beginning to lay and dispose of them as soon as the first lot of eggs has been produced. When a hen has laid its first clutch, it is no longer to be regarded as even a second-class table bird.

The egg is composed of the yelk, the chalaza, or cords for holding it in proper position, and successive layers of white albumen. About these is the skin, and covering all is the shell. In packing eggs for hatching, some roll each one in paper, turning it over and over in the process. There is no more effectual way than this of rendering an egg infertile. An egg may be violently shaken and no harm result, but by turning it over and over the chalaza becomes twisted. For packing, a basket is better than a box, in having a handle and in affording more air, and hay is to be preferred to sawdust, inasmuch as the latter is apt to become a hardened mass by jarring and the eggs become either broken or injured.

The shell of an egg is really in three parts, the exterior, interior, and between them a structure of many-sided blocks, so arranged as to resist pressure. As hatching proceeds the inner surface gives way, then the little blocks drop out and the outer shell becomes so fragile as to be easily broken by the picking of the chicks. The difference discernible in the various sorts of eggs is not so much due to the various kinds of birds by which they were produced, as by the condition of the individual birds producing them. In regard to size, the yelks of all are about the same size, the difference lying in the amount of albumen surrounding the yelk and the size of the air chamber. When the ova are produced too rapidly, it sometimes happens that a blood vessel bursts and a little clot of blood passing down the oviduct with the yelk is enveloped with it in the albumen. When the egg is cooked this becomes hard and resembles a small bean.—*Tegetmeier.*

ARE you a subscriber? If not, why?

CLEANING THE POULTRY-HOUSE.

With some, the matter of cleaning out the poultry-house is not an important duty. Once a week, twice a month, or as often as it becomes foul, is the rule, but it is not always easy to determine when the work should be done by observation. Much depends on the manner of cleaning, the absorbent used, and the number of birds in the house. Then again, the weather should be consulted. If the air is cold and dry, there will sometimes be no odor arising from the droppings, and the birds will not then be very uncomfortable when the droppings are allowed to remain, but nothing more conduces to dampness and disease than a floor covered with filth. Unless some absorbent be used, the work of cleaning the poultry-house will be difficult. The object should be to prevent the droppings from adhering to the floor, which should be of boards, and tight, as a wooden floor is warm in winter, can be swept with a broom and is therefore more easily cleaned. If the roost is placed over a wide board, which catches the droppings, the board should be always kept well covered with dry dirt, adding a peck of plaster to every two bushels of dirt, which should be sifted and in a fine condition. The larger portion of the droppings will fall on the board, but the floor will also catch a portion. Sawdust may be scattered over the dirt, also, with advantage. The proper way to clean is to first sweep the floor with an old, rough broom, then scrape the floor with a hoe, and sweep again. Next scatter dirt or finely sifted coal ashes over the floor, so as to cover it completely, and after cleaning off the board under the roost, rub kerosene on the roost. If this is done twice a week, only a few moments will be required for cleaning the poultry-house, and if done properly no odor will be distinguished therein. But the work should be done regularly and not semi-occasionally, so as to permit of confining the hens in damp weather. If the house is kept clean, the fowls should be shut in on rainy days, and they will be less liable to danger from roup or colds.

ROOM IN THE POULTRY-HOUSE.

The majority of the inquiries that come to us, ask: "How many fowls can I keep in a house of a certain size?" Now, in order to answer many, we will say that a safe rule is to allow ten square feet for each hen, or a flock of ten fowls in a house 20x10 feet, and one foot length of room on the roost. This calculation gives plenty of room on the *floor*, the place where it is most needed, especially in winter, when scratching room is necessary, as there are then periods when the hens must be kept up. We do not infer that a larger number cannot be kept in a house of the size mentioned, as it really can be made to accommodate double that number, but it is better to have a smaller flock well provided with room than a larger flock that is unprofitable. There is too much temptation to crowd fowls, and the desire to do so has caused disease and loss. The allowance of plenty of room will often induce the hens to lay all the winter, where otherwise they will become lazy and fat. Give them plenty of warmth and *scratching* room in winter, and you will not be far wrong, if at all.

THE BARN-YARD REFUSE.

The pickings of the voidings of horses and cattle, with the waste grains, hay seed and broken leaves of clover hay which the hens secure, amount to a large quantity, and also afford a variety. That is the reason why the common hen sometimes lays more eggs than the pure breeds. The latter are overfed, get but little exercise, and, as all writers teach "feed heavily," the common hen is compelled to work while the pure-bred hen has nothing to do but patiently wait. But nearly all farmers feed corn, which keeps the hens warm, and though the supposition is that the common hen receives only corn, yet no estimate is made of the varied food she picks up in the barn-yard. The fact is that the common hen is better fed, so far as variety is concerned, than the pure bred, but she must seek it, which she does, and in an industrious manner, her very industry keeping her in excellent laying condition. It pays to keep a few hens in the barn yard in order to utilize the waste that occurs. The farmer may not notice the loss from waste, but the alert hen, with her keen eyes, does not let a single grain escape her.

THE PEA-COMB ON FOWLS.

If all the breeds possessed the small pea-comb of the Brahma, more eggs would be laid in winter. It is well known that the larger the comb, the greater the surface exposed to the effects of the frost, and as the Brahma is favored with the pea-comb, it receives the distinction of being an "excellent winter layer," when in reality it is simply better protected from the cold. What is known as the pea-comb is "a triple comb, resembling three small single combs joined together at the base and rear, lower and narrower at the front and rear than at the center, and distinctly divided, the largest and highest of the three single combs being in the middle." On Brahma hens it is exceedingly small. It is a characteristic that should be attached to all future new breeds.

A CHEAP, HOME-MADE INCUBATOR.

Mr. W. C. Maegeorge, Poughkeepsie, N. Y., sends a design of his incubator, which the readers of this journal may use, there being no patent on it. In describing it he says:

"This incubator may be made on a larger or smaller scale, as preferred For the experiment I simply took a rough box, twenty inches long, fifteen inches wide and seventeen inches high, but I would advise that it be made double, with sawdust packing. The following is better: Length of box twenty-six inches, width twenty inches, height fifteen and one-half inches—outside measure; inside, two inches smaller; that is, there is a space of two inches between the two boxes all around, except in front. There is an upper ventilator and a lower one, with tubes for fresh air in the bottom. The machine is thirty inches high from floor of room to top of incubator.

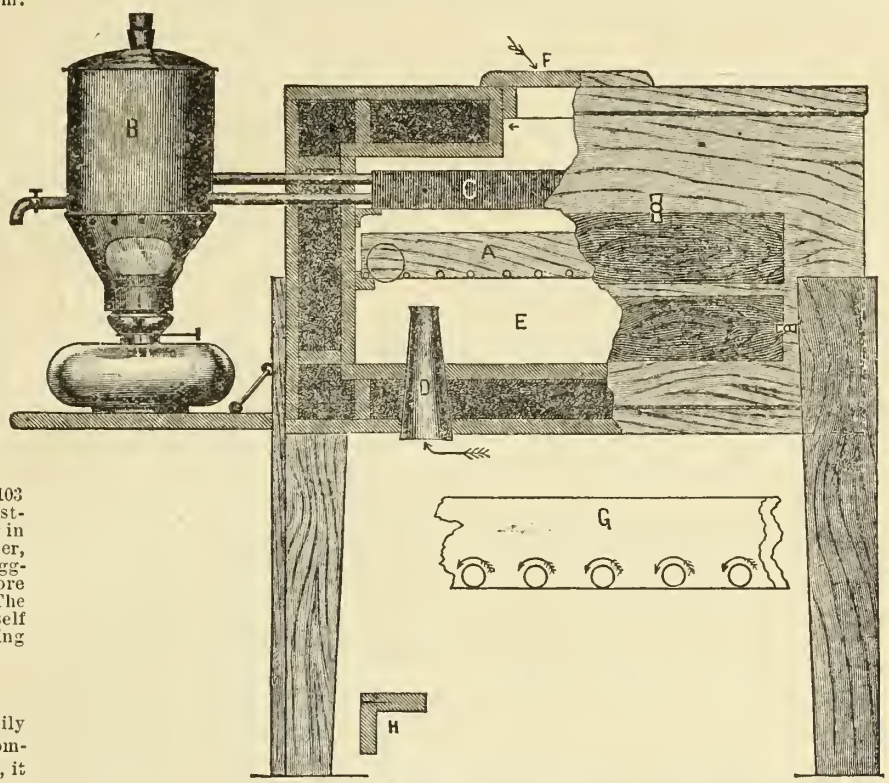
"The tank is of galvanized iron, eighteen and one-half inches long, thirteen inches wide and one and one-half inches deep, with two pipes at the left-hand side to connect with the boiler, one a little lower than the other, and spreading off at right angles to the tank.

"The boiler is of iron, 6x6 inches, with three-quarter inch pipes and connections. The hood (globe) under boiler is four inches high and three inches in diameter at the base. The burner is a regular burner, and should burn without a chimney.

"The egg-tray has rollers on the bottom, which makes the turning of the eggs very easy.

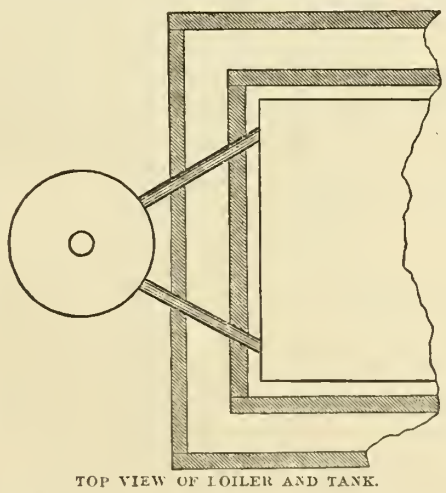
"The cost of this incubator should not exceed $6, and the cost of operating is about three cents a day. The greatest expense is the tank and boiler. My lumber cost very little, as I used boxes. There is no regulator. If kept out out of the draught this incubator will work like a charm.

"In operating it the heat is kept at 103 degrees, the bulb of the thermometer resting on an egg. I kept two pans of water in mine all the time, under the egg-drawer, and also a wet sponge or two in the egg-drawer, but when hatching, add more sponges and keep the drawer shut. The machine illustrated here explains itself without any extended description being necessary.

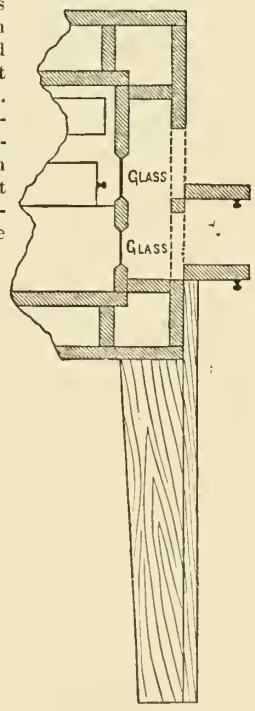


HOME-MADE INCUBATOR.

A egg drawer, B boiler, C tank, D lower ventilator, E warm air space, F upper ventilator, G section showing rollers in egg-drawer, H end view of leg.



TOP VIEW OF BOILER AND TANK.



SIDE VIEW OF FRONT.

THE COMMISSION MERCHANT.

While some find it a matter not easily surmounted to secure the address of a commission merchant in whom they can rely, it is safe to say that the faults are often more with those who ship to market than with the merchants. The reputations of all merchants are at stake, and they will hold on to a customer who consigns only choice produce, and aim to secure for them the highest prices to be obtained. The farmer who ships strictly fresh eggs, and allows only choice poultry to leave his farm, will find that, instead of seeking a merchant, the merchant will seek him, as too much choice poultry never reaches the market.

SHIPPING HEALTHY FOWLS.

The object in raising poultry on the farm is not only for producing eggs, but to supply meat to consumers. We doubt if many have given consideration to the matter of responsibility assumed in supplying poultry. There is a responsibility connected with the sale of poultry that is just as binding as any, yet there are so many channels of trade and so many interested parties to the several transactions, that to compel a faithful observance of the laws of health is difficult. But the farmer bears a heavy responsibility, however, whether others share it with him or not, and in his hands is the safety and protection of whole communities, as the sources of food are on the farms.

In all sections, and in every town and village, we find persons of sound health and others diseased. The same rule applies to animals, and even with the aid and advice of skillful physicians, it is at times impossible to locate and determine the nature of some diseases, and if an occasional disease occurs now and then in a family of a few, how much more so are the liabilities of outbreaks where hundreds are together.

The attention of the reader is invited to the consideration of these facts with a view of impressing upon each the necessity of strictly guarding the flocks against diseases. When a flock has been subject to roup, the hens will not again reach that condition of health which fits them as food for humans, for roup is of a scrofulous nature, and though apparent cures may be effected, yet the birds may not be in health. This fact has been demonstrated frequently, and in some cases of roup the birds show every symptom of scrofula. The question is: "Should birds that have been subject to disease, or which have contracted malignant diseases, be marketed after they recover from their disadvantages?" That such birds can be sold is true, but whether the farmer is willing to assume all responsibility for the results, is something for him to consider; not that he violates any legal act, but has he the right to overlook his moral obligations in selling?

As a class, farmers will not sell diseased animals or birds (though an occasional exception may happen), and they suffer loss from that cause, but they often unknowingly send animals and birds to market that are not as healthy as they should be. To avoid this to a great extent, it would be to their advantage to pen up their fowls for a week or ten days and attempt to fatten them by heavy feeding, the result being that the healthy fowls will show better appetites than those not in as good condition, and though such a method will not avoid the difficulty entirely, yet it will largely assist in the shipping of better food in the shape of poultry. The higher quality of the poultry, and the increased prices obtained, will more than return to the farmer any extra labor bestowed or food allowed, and all classes will be benefited.

LATE LAYERS.

There are hens that begin to lay on the advent of spring and lay well until winter approaches, when they cease and begin to moult Other hens moult in the fall, but do not lay in winter. The hens known as the early layers begin in November, while those beginning in the spring are known as late layers. Only a careful record of the number of eggs layed and the cost of food and incidentals, will enable the farmer to make a comparison of the profits from them. It is not always the hen that lays in the winter from which the greater profit comes. A hen that begins after the winter is over, and which seeks the greater portion of her food by foraging, may give a larger profit than the hen that produced the larger number of eggs in winter. Much depends on each particular hen, the individual characteristics and the breed largely affecting the matter of profit. The point is to make the largest profit, whether in winter or in summer.

MEAT AND MILK.

The two most available sources of nitrogen are milk and meat. The fat of the meat is of no value, as the hens can procure from the grains all material necessary for the yelk, but when the food is not varied, the nitrogen, which is so essential a factor in the albumen, is often lacking in the food, and the hen cannot supply eggs. Lean meat, either from the butcher or from the factories at which fat is rendered, will be found serviceable, but in the latter there is, at times, but very little lean meat. Meat and bone from the butcher are the best materials, provided the bones are pounded and fed with the meat. Milk is excellent, but as it consists so largely of water, it is necessary for the hens to drink a quantity beyond their capacity to render it a substitute for meat, but nevertheless it is a valuable adjunct to the food at all times. Fresh milk or sour milk may be given the hens, but chicks should only be allowed fresh milk, and sour milk should not be given the hens if the fresh article can be had, but it may be allowed, however. All soft food may be moistened with milk, instead of water, with advantage.

KILLING THE LICE.

Although we have frequently given remedies for the destruction of lice, several of our readers have written us, and we believe that during this warm season a few hints will not be out of place. We give the following rules:

1. To destroy the red mites on little chicks, dust the chicks well with insect powder. Dust the hen also, as lice go from the hen to the chicks. For the large, gray lice, rub a few drops of melted lard on the heads and throats; but do not use kerosene. Very little oil or lard should be used, as grease is injurious to chicks.

2. To destroy lice on fowls, provide a dust-bath. Also dip each hen in soapsuds, rubbing the feathers well; dip them so as to immerse their heads and bodies well, and do not rinse them. Add a gill of crude carbolic acid to a bucketful of the suds, and have the suds strong. Do this on a clear day, so that the hens will dry quickly.

3. Saturate the poultry-house with kerosene—roosts, floor, walls, under the roof, and do not miss a crack or crevice. Spray it in, or use a watering-pot. The kerosene emulsion is also excellent. Keep the poultry-house clean, and remove the droppings daily during the summer. Repeat the work once a week, or as often as may be necessary.

EQUALIZING FOODS.

When a variety of food is given, the quantity should not be increased to a greater amount than when grain is given. Those who feed grain make the mistake of not diminishing the grain in proportion to the clover or meat added. For a laying hen that is producing eggs regularly, the estimate of food allowed per day is four ounces, but it does not require any explanation from us to convince those who keep poultry that four ounces of grain is a very different thing from four ounces of cabbage or potatoes, as the one is a concentrated food, while the others consist largely of water. A gill of corn is about three ounces, and by using the gill as a mode of measurement the feeding may be easily regulated. No quantity of grain, whether of wheat or corn, given to a fowl should exceed one gill a day, and this also depends upon the breed to a great extent, and even upon individual hens of the breeds, as some eat more, and require more, than others.

Finely-cut fresh bone (with adhering meat) is also a concentrated food—more so than grain—hence, in feeding the hens one ounce of bone and meat daily (which is ample), the gill of grain must be reduced to one-half, as the bone and meat compensate for the grain. It would be expensive feeding if this equalization of foods was not given attention, and the hens would soon become overfat and worthless.

Allowing four ounces of food per day (three of grain and one of bulky food), and estimating a gill as three ounces, the gill should be reduced in accordance with the quality of the food. If an ounce of bone and meat is given, it should equal one and a half ounces of grain. If finely cut clover is given, one ounce of the clover should equal only half an ounce of grain, because the grain is more concentrated than the clover. We do not claim that these proportions are correct, but they enable the poultryman to roughly estimate how to feed. The hen that does not lay should be fed only one half as much as the laying hen, owing to the fact that one is a producer and the other not.

QUALITY MAKES THE PRICE.

Make it a point to have your poultry of the best quality before shipping to market. One who is not accustomed to visiting the large markets knows nothing of the enormous amount of inferior poultry that is sold, and which largely affects the prices; yet, there is always a demand for that which is good, and at a price above the regular quotations. The assorting of the carcasses before shipping also leads to better prices. Old roosters (which seldom sell at more than half price) should not be in the same boxes or barrels with better stock; and to ship poultry alive, and have roosters in the coop with fat hens, is simply to lower the price of the hens, as the buyer will estimate the value by the presence of the inferior stock. In fact, never send any poultry to market unless in first-class condition, and under no circumstance ship the inferior with that which is better.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

TO THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

LOOK out for the large head lice on the skin of the heads and necks. Sweet oil (only a few drops) kills them.

WHY were the Langshans left out of the auxiliary and open classes in the new arrangement of the decimal system?

LOOK this issue over. It is as full as possible, and all is straight *chicken talk*. Each issue is worth a year's subscription.

"SWELL HEAD" is a disease that affects breeders as well as poultry. A little (poultry) learning is a dangerous thing.

JUST run your thumb into your vest pocket and send us twenty-five cents for the POULTRY KEEPER for six months.

CONNECTICUT has granted the State Poultry Association $500, and the Association will have a big show January 22d to 27th.

THE caponizing articles elsewhere are given to show what has been done as experiments. The instruments of W. H. Wigmore are the ones used and preferred.

NOW is the time to begin with an incubator. Do not wait until the time comes for hatching broilers, but *learn* while eggs are cheap and when you have the time to do it.

THE *Southern Fancier* dubs the editor of this paper as "Colonel." We object. Uncle Mike may glory in a military title but we do not. Call us anything, but leave us out of the regiment.

AN industrious poultry breeder wishes to know why Mr. Felch's new association is not called the "Wholesale Limited Standard Poultry Club," None but the rich deserve poultry awards.

THE *Fanciers Journal* has not been supported by advertisers of poultry as it should have been. Breeders like the wash tub talk but did not respond with their cash as they should have done.

MR. LEWIS H. MILLER, West Chester, Pa., now conducts the business of the firm of Miller and Heald, Mr. Heald retiring. Mr. Miller is now giving his personal attention to his dog kennel and poultry yard.

THE book "Five Hundred Questions and Answers," issued by J. W. Darrow, of the *Fanciers' Review*, Chatham, N. Y., has had a large sale. It is undergoing revision, and a new edition will soon be issued.

SOME of the papers who filled up their columns with two pages of the Felch decimal score card matter, do not know how to get subscribers. We would not devote our space to such matter even if paid for as an advertisement.

DID you ever buy a book with about fifty different kinds of poultry houses illustrated. We believe not, as we doubt if such a book is published. Now, we have three issues—April, 1887, October, 1888, and July, 1891, which will only cost you five cents each (fifteen cents) and you will have more plans than you can buy for ten dollars.

MR. EMERY S. PUGH, Utica, N. Y., has decided to remain at Utica instead of locating in Missouri. Being absent on a tour of inspection seriously interfered with his business this season which he regrets very much.

PERHAPS a silver dollar is now worth only fifty-two cents. Well, just send us one, and we will allow you 100 cents on the dollar for it. A dollar pays for *three* subscribers—and a fifty-two cent silver dollar at that.

COLORADO poultrymen complain that they have to pay thirty-five cents a gallon for coal oil and prefer hot water incubators. We have quite a number of inquiries for the hot water incubator, but we do not make or sell them.

THE big show of 1894 is the next question. Arrangements are being made to have it at Atlanta, Ga., and the Southern Poultry and Pigeon Association has recently held a meeting to effect such an event. Mr. H. C Kuhns, Atlanta, is Secretary.

MR. GEO. E. PEER, Rochester, N. Y., chairman of the Buff Cochin Standard Committee, desires fancier's and breeders to immediately forward any suggestions of proposed change they may deem advisable in the present standard on the Buff Cochin.

MR. GEO. A. MCFETTRIDGE, Speonk, N. Y., will have two months' vacation, beginning August 1st, and informs us that he will be willing to assist any one who wishes to engage in the duck business, as he will devote the two months to that purpose. Who wants to len? Here iars your chance.

HOW some of the poultry papers live after filling their pages with the trash that comes along is more than we can surmise. Some of the "stuff" that has been launched forth within the past three months is as much a mystery to the new subscribers as if the papers were not devoted to poultry.

ROSE-COMB Black Minorca eggs have sold this season for fifty cents each, or $7.50 for thirteen. This may seem like a large sum, but orders through advertising in the POULTRY KEEPER came in faster than they could be filled, Mr. Theo. Campbell, of Lexington, Ky., being the fortunate possessor of the new breed.

OF all the fools on earth a "swelled head" poultry fool is the greatest. As soon as he learns that a black feather should not appear on a white plumage he proceeds to put on a "knowing" look, his wisdom is displayed, and he assumes the title of *Judge*. And, after all, his great knowledge is simply the fact that c-a-t spells *cat*. That is about all there is in it.

THE Rhode Island State Fair Association is preparing a grand schedule of premiums for the fall exhibitions and the poultry department will be liberally treated. A building 155x60 feet will be devoted entirely to this department. The following gentlemen have been engaged as judges: H. B. May, H. S. Ball, N. A. Knapp, G. W. Marshall and A. A. Fillebrown.

DO not overlook the premium we offer of an "Instructive Book," of *chords* that will enable any person to play an accompaniment to any melody without the least knowledge of music whatever, and with but little or no practice, It shows just where to place the finger to make a note, and is intended for the banjo or guitar. Price fifty cents, or eighty cents for it and the POULTRY KEEPER.

THE Frederick County Agricultural Society of Frederick, Md., will hold their poultry show in connection with their annual fair, October 10th to 13th, inclusive. Liberal premiums and good accommodations will be offered to exhibitors. Write to the Secretary, Mr. George William Connor, Frederick, Md., for premium lists, entry blanks, and other information.

SOME of the shining lights that once kept their fires burning when the POULTRY KEEPER started, nearly ten years ago, then supposed that the world would cease to revolve without them. They sold themselves like sheep in the A. P. A. meeting, attempted to "boss" the machine, and finally were not able to hold up their own weight. Slowly they sank out of sight, and to-day they are almost unknown as breeders. Treachery always meets its reward sooner or later.

Poultry Talk is the name of editor J. H. Davis' new paper, published at Atlanta, Ga., at fifty cents per year. Mr. Davis has long been the editor of the *Southern Fancier*, and has made it one of the leading poultry journals. Send to him for a sample copy. *Poultry Talk* and the POULTRY KEEPER will be sent to one address for seventy cents, and for one dollar we include the two papers and Boyer's book "Profitable Poultry Farming."

THE Washington State Poultry Association has one of the most active and energetic Secretaries of any Association. We allude to Mr. John D. Mercer, Port Townsend, Wash. It was he who aided so largely in building up the Los Angeles Club, and the poultrymen of Washington were fortunate when he moved his home among them. Mr. J. W. Clise, former Secretary of the Colorado Poultry Association, is another valuable acquisition to the new state of Washington.

Uncle Mike Boyer filled his pipe and raised a cloud of smoke. It was five minutes before he spoke, and then he slowly said: "Don't it beat all! Here is a two-column article in a poultry paper on *combs*. Now, of all the useless things on a fowl the comb comes first, and yet it seems to be the most important portion of the fowl from a standard point of view. Anybody can discern a rose comb from a single comb, a blind man can do it. One might as well write an essay on how to distinguish a full rigged ship from a plate of mock turtle soup." Then Uncle Mike loaded his pipe again and plunged into deep thought.

IT would seem that such a prominent member of the A. P. A., as Mr. Felch would have submitted to his first love (the A. P. A.) his advanced ideas instead of inaugurating a rival association and then inviting the A. P. A. to consider things from it. Perhaps the "harmony of action" means we will use the decimal score card and no other, and having in our peculiar way invited the A. P. A. to partake of an injection of Felchiana our duty to the *outside* public ends. One good feature is that it will relegate scrubs to the rear. Even a *pedigree* will not save them.

CUT clover hay can be purchased. The Buffalo Seed Co., 15 to 19 Elliott street, Buffalo, N. Y., is about to issue a new pamphlet on cut clover hay for poultry, the pamphlet being free to all. The company has arranged with farmers for a supply of second crop clover hay and it will be cut in shape for poultry use. They also have crushed oyster shell, coarse and fine raw bone, animal meal and beef scraps, grains of all kinds, drinking fountains, feeding pans, incubators, brooders, and poultry supplies of all kinds. Catalogues free to all POULTRY KEEPER readers.

THE *Fancier's Journal* has decided to give more dog and less poultry. The pigeon department has been kicked overboard. Mr. Drevenstedt will be no longer connected with it, and Mr. Boyer will guide the helm in the poultry department. The *journal* confirms our oft-repeated assertion that no poultry journal can succeed on a half-dog and half-poultry ration. Its poultry department will be devoted to *practical* poultry, and the "discussions" that have been given out in its columns every week, in order to gratify gentlemen suffering with "swell head" will find a place no more, though Mr. Sternberg and a few others have contributed some grand articles. We predict for the journal hereafter a more successful career. As a dog paper it has no equal.

"PROFITABLE POULTRY FARMING," by Mr. M. K. Boyer, price twenty-five cents, for sale by us, treats of the growth of practical poultry farming; the requirements; the best way to begin; the value of crosses; the use of the thoroughbred; how to have hardy and prosperous stock; the success of artificial incubation; running an incubator and brooder on the farm; building an incubator cellar; colonizing the chicks; R. G. White's methods of feeding chicks; poultry as an adjunct; a butter and egg farm; size of hen yards for success; building hen houses for comfort as well as profit; feeding for eggs; Mr. Hunter's methods of egg farming; how to test eggs; poultry and fruit; broilers and berries; how the scheme works in Hammonton; specialties in vegetables; a general poultry farm; the Atlantic Duck Farm; duck culture for profit; size of houses; how the breeding ducks are fed; how the ducklings are fed; how to dress ducklings for market; and other useful points. Price, twenty-five cents per copy.

FOR ONE DOLLAR.

Send us one dollar and the names of *three* subscribers, (your own and two others), and we will send the paper to each for one year. We will take gold, silver or paper dollars. Even the silver dollar (*said* to be worth only fifty-two cents), will get the three subscribers. We are not selfish.

NEW BREEDS.

Instead of letting in the so-called new breeds, the first thing to be done is to strike from the Standard the *trash* that is already in. We have about seventy-five breeds, which is fifty too many, if *breeds* amount to anything. Some of the breeds in the Standard are not even in existence, while others are very rare.

SPECIALTY CLUBS.

Where are the specialty clubs? What are they doing? Now is the time to arrange plans for the next shows and bring the several breeds into prominence. They might meet and prepare standards, and thus assist in the work by presenting them, ready and correct, when the A. P. A. meets.

THE A. P. A. MEETING.

What is the use of holding the A. P. A. meeting *inside* of the Exposition grounds. It means that members must pay an *admission fee* to get into the grounds, and though some may have admission tickets others will not. As members cannot see the show and be at the meeting at the same time, it is easier for all, and better, to hold the meeting in some hall outside.

PLANS FOR AN INCUBATOR.

Do you want to try an incubator. If so send two stamps to P. H. Jacobs, Hammonton, N. J., with the name, (or names) of any parties known by you to be interested in poultry. Now is the time to make an incubator and learn. Full directions for operating are also sent, and the several parts are illustrated. Several thousand have been made, and the incubator does good work. You can make it yourself.

LOOK OUT FOR THEM.

The judges at the shows may expect to have a hard road to travel this fall and winter. The experiment of scoring the same bird *twice*, with *witnesses* of all the *facts*, will be tested at places when least expected, and the *comparison* method will prevail by comparing the score cards. But, as scoring is so *exact*, even a judge cannot object, for the score card tells the truth and truth will be affirmed.

A SOUTH CAROLINIAN'S WRATH.

Mr. Lee, who is rather not pleased with our position on the Langshan matter, will please learn from us that we admire the Langshans, and all that we have been guilty of is preventing two or three men from attempting to monopolize the trade, not only by pretending to have something better than others, and also slandering and injuring competitors, but in "sponging" their way through the poultry papers without money. We have protected the rank and file of the breeders, driven one or two false claimants into their holes, and assure Mr. Lee that nothing said or done by us applied to him. We are sometimes a little hard on false pretenders, however.

NEW YORK POULTRY SOCIETY.

The New York Poultry and Pigeon Association has elected the following as directors for the ensuing year: T. H. Terry, Robert Colgate, P. Williams, F. Havenmeyer, G. P. Raynaud, C. M. Griffing

George Pardue, D. E. Newell and H V. Crawford. The officers for the ensuing year are: President, T. H. Terry, Hempstead; Vice-Presidents, Robert Colgate, New York City, Philander Williams, Taunton, Mass., and T. Havenmeyer, Mahwah, N. J.; Treasurer, C. M. Griffing, Shelter Island; Secretary, H. V. Crawford, Montclair, N. J The next annual exhibition will be at Madison Square Garden, the first week in February.

SILENT CONTEMPT.

The World's Fair managers have been very silent in regard to who will be selected to manage the poultry department of the Exposition. In fact, we may state that their action is one almost of contempt. Political wire-pulling, petitions, influential appeals, and all the known methods of securing an object, have been resorted to, in order to secure positions. It is reported that there are twenty-seven candidates for superintendent, each *sure* of his appointment, and 171 applications to judge. In no other department has there been such a wild race, and the World's Fair managers may have concluded to work the matter out alone, in the even tenor of their way.

WORKING OFF MOTTLED BIRDS.

When a man crosses black birds with white ones, such as Blac. Langshans and White Cochin, he is sure to have some black, some white, and a large number *mottled* white and black. He cannot afford to lose so many mottles, so he gives them a name, and works them off as a *breed*. He may claim to be the only importer, and try to down all other breeders, so as to get their trade, but his *mottles* are evidences that the stock in his hands are different from that of others. H may write articles on "What I Know About Langshans," and get his cuts in the papers, but everybody knows that black and white birds produce mottles. We do not accuse any one of doing as stated, but we do not believe that the majority of persons are ready to accept mottled birds as a *breed*. They are too easily produced.

STANDARD LANGUAGE.

If somebody would undertake the job of changing the language used in the Standard he might find plenty of work to do. The proposed new Standards for Plymouth Rocks, in the "*June and July*" issue of the *Fanciers' Gazette* contains the following:

CONDITION:—Perfect health, free from disease or vermin, sound and complete in comb, feet, feathers, and unsoiled by contact with dirt or from the effects of a former disease.

If a bird is in *perfect* health, why add "free from disease," or "from the effects of a former disease," as "perfect health" covers the whole matter of disease, and if a thing is perfect it cannot be more so. The other suggestions in the article from which the above is an extract, referring to "same as the present Standard" should be given very cautiously. The present Plymouth Rock Standard needs *revising*, and needs it badly.

WEIGHTS OF EGGS AND CHICKS.

A writer in the *Prairie Farmer* gives the following as the weights of eggs layed by different breeds. We will state that no two hens, even of the same breed, will lay eggs of the same weight:

Cochins,	8 to the pound
Plymouth Rock	8 to the pound
Light Brahmas,	8 to the pound
Black Spanish	9 to the pound
Leghorns,	10 to the pound
Hamburgs,	11 to the pound
Bantams,	16 to the pound

The weights of chicks at different ages is given as follows, but which has before been given by us.

An egg that will weigh two ounces will hatch a chick weighing one and one-fourth ounces; at one week old will weigh two ounces; two week, four ounces; four weeks, ten ounces; six weeks, eighteen and one-half ounces; eight weeks, twenty-eight ounces; ten weeks, thirty-six ounces; eleven weeks, forty-one ounces. For an ordinary growth it costs five cents per pound to bring to maturity. Profit and loss can be figured upon the above basis.

Here again something depends on the *kind of chick*, and the increase made as above is only under the best conditions. However, we present the extracts as *indicators* rather than as facts.

BUYING STOCK NOW.

Now is the time to procure your breeding stock for next year. The breeders have full yards, and can sell cheaper now than at any other time. If you wait until spring you will be able to procure but few and will pay higher prices.

CANADIAN WYANDOTTE CLUB.

The above club held their annual meeting at Toronto, on Thursday, September 15th. Mr. J. E. Meyer in the chair. The following were elected officers for the ensuing year: President, T. H. Scott; Vice Presidents, S. M. Clemo, J. E. Meyer, J. L. Margach; Secretary-Treasurer, John Gray, Todmorden; executive committee, Jacob Dorst, T. R. Wood, R. Bloye, M. B. Hague, R. E. Kent, J. M. Greyerbiehl. List of members, T. H. Scott, St. Thomas; R. E. Kent, Kingston; S. M. Clemo, Galt; Jacob Dorst, T R. Wood, J. E. Meyer, Toronto; John Gray, R. Bloye, George T. Davies, Todmorden; J. L. Margach, Port Hope; J. M. Greyerbiehl, Guelph; Jacob Segmiller, Walkerton; G. G. McCormack, Wm. Court, London; P. Wellington, Sarnia; M. B. Hague, Inglewood; John Lambertus, Walkerton; E B. Cale, Stratford.

TORONTO POULTRY ASSOCIATION.

The regular meeting of the above association was held in Temperance Hall, on Thursday, October 13th, the president, Mr. John Miles, in the chair. The secretary being absent, Mr. Bache was appointed to act for him. The minutes of the previous meeting were read and adopted. One new member, Mr. C. Coulter, was proposed by Mr. F. Coulter and accepted. It was moved by Mr. Bonnick, seconded by Mr. Duff, "That five dollars be expended to clean and engrave the game cup (given by this association as special prize at the Industrial Exhibition, and finally won by Mr. James Main), before presenting it to the winner." Carried. Moved by Mr. Bennett, seconded by Mr. Duff, "That a vote of thanks be given Mr. Daniels for the efficient manner in which he had filled his position as superintendent of the poultry department of the Industrial Exhibition." Carried. Mr. John Gray is secretary.

THE SEATTLE POULTRY CLUB.

The Seattle Poultry Club, since its incorporation, has been slowly but surely increasing its membership with the leading breeders of western Washington and the Pacific northwest in general. The Club is officered with the following well-known poultrymen, and a great show is naturally expected by its members: President, J. H. Woolery; Secretary, E. P. Bowditch; Treasurer, C. C. Batson; Vice Presidents, Geo. Tinto, E. S. Tremaine, V. A. Pusey, Mrs. G. M. Calligan and Dr. J. S. Klober; Superintendent, F. L. Van Dusen. Directors: J. H. Woolery, Geo. Tinto, E. S. Tremaine, Dr. J. S. Klober and F. L. Van Dusen. The Club issues one share of stock as a membership certificate upon a payment of two dollars and fifty cents, ten per cent of face value of stock. While some of its members are not old veterans in the cause they are composed of the right material to make a strong club. As the Seattle Poultry Club has been the advance of poultry interests in that section for the last two years the breeders have quite naturally appreciated it as such, and any one desirous of any particulars in regard to the Club or the January show, the secretary Mr. E. P. Bowditch, Box, 247, Seattle, Wash., will accommodate them. The Club's financial standing is good. No officers receive any salary, and after the stock is issued dues are only one dollar per year.

EXPERIMENTS IN CROSSING.

During the past spring, we made quite a number of experiments in crossing different breeds, some with success, and some without any apparent gain. The best cross made was Indian Game on Black Langshan. The chicks show an unusual plumpness, very pretty plumage, and rapid growth. The chicks are not yet of broiler size, so nothing can be said of their table qualities. Another cross was Indian Game on Light Brahma. These are by far the handsomest chicks in plumage, but do not show the plumpness of the first cross. Black Minorca on Langshan is no new experiment, but this year the results have been more gratifying, and if anything, they will give better specimens than we have ever before secured. This is the best cross we ever made for winter egg production. Last year we crossed Plymouth Rock on Langshan, and this year we mated a Minorca cock to the pullets of last year's cross, giving the foundation of the famous English breed, the Orpingtons. They are now broiler size, and we had the pleasure of testing their table qualities. The meat is firm and juicy, and of a delicious flavor. The Orpington breed undoubtedly was secured by again crossing Minorca on the pullets of the triple cross, and continuing the same mating until the Dominique feathering and feathered legs were bred out. The cross as of Minorca on Brown Leghorns, and Minorca on White Leghorns, was not very satisfactory, as the chicks are very delicate. Our heaviest loss was in these crosses. It was our intention to see if the combination of two heavy laying breeds would give an increased egg record, but we are afraid that we will not have enough pullets left to give a fair test. As the chicks of the different crosses are all young yet, we cannot say what particular benefit we will derive, but the outlook now is very favorable to the Indian Game-Langshan cross for table qualities, and the Minorca-Langshan for egg production. We speak of the latter cross, however, from past experience. The object of a good cross is to add hardiness and thrift to the stock, and if we can combine the good qualities of two distinct breeds we secure a double advantage. Mr. I. K. Felch, who is a thorough fancier, admitted in the June *Poultry Herald* that a *good* cross was a *good* thing, which goes to show that the opinion is not alone with the market poultry men.—*Associate Editor.*

THE CHANGE IN THE FANCIERS' JOURNAL.

The *Fanciers' Journal* has revolutionized its poultry department, and will in future devote the greater portion of its space to dogs. This is a wise move, as we do not believe it has ever been benefitted from the kind of poultry literature that has filled its columns.

Time and again papers have come to the field and endeavored to build themselves up by catering to a class of men who are too few in number to be of any advantage as subscribers (and they always expect to be dead heads, as the majority of editors foolishly send them their papers free), and this class is also selfish, expecting to receive a large share of attention at the least cost. The *Journal* made the experiment, and held out long and well, but the time has not arrived for the advent of the *weekly* poultry paper unless it is devoted to *practical* poultry. No paper will succeed that does not *teach* its readers. We held to that rule long ago, and have cared little for the opinions of the so-called "big guns," who compose a class that seeks to get all the notices and who spend the least money with the journals.

There have been columns and columns of the *Journal* wasted on frivolous discussions, and articles on diseases, (with "all rights reserved") that were perhaps as inapplicable as possible, while the space devoted to pigeons might as well have been given up to mules so far as the paper was benefitted.

We are not discussing the business of the *Fanciers' Journal*. It has, in our opinion, acted wisely, and its poultry department will hereafter be on the *practical* basis. Its growth and prosperity will come from the dog breeders, and it will increase its subscription and enlarge its advertising by giving its readers more dog news. It has nothing to lose by the change except to disgust a few men suffering with the "swell head" disease, but they are too few to do harm, while their patronage is not worth seeking, for unless they are "boomed" in every issue they had no use for the paper. The POULTRY KEEPER put on the screws and shut down on them long ago,

Success to the *Fanciers' Journal*, and may it spring rapidly to the front. It is the best dog paper in the country now, as it is almost wholly devoted to that interest, and we wish it prosperity in every respect.

SEX OF EGGS.

Every now and then some one steps forward to explain how one can distinguish the sex of chicks before the eggs are hatched, and the *theories* are numerous, the following now going the rounds, as it has done before:

Last winter an old poultry keeper told me he could distinguish the sex in eggs. I laughed at him, and was none the less skeptical when he told me the following secret: Eggs with the air bladder on the center of the crown of the egg will produce cockerels those with the bladder one side will produce pullets. The old man was certain of the truth of this dogma, and his poultry yard so far confirmed it, that I determined to make experiments upon it this year. I have done so, registering the egg bladder vertical, or bladder on one side, rejecting all in which it was not one or the other, as in some it was only slightly out of the center. The following is the result: Fifty-eight chickens were hatched, three are dead, eleven are yet too young to decide upon their sex; of the remaining forty-four, every one has turned out true to the old man's theory. This, of course, may be an accidental coincidence, but I shall certainly try the experiment again.

We have tested the above, and tested all other theories, including round eggs, long eggs, rough-shell eggs, eggs with warts on the ends, and every other suggestion, but we can truthfully state that there is no method of determining the sex of the chicks in the eggs.

MR. DEVLIN ENDORSES MR. PHILLIPS.

The fat hen discussion is becoming interesting. Mr. J. A. Devlin, 305 Walnut St., Philadelphia, comes to the front and boldly proclaims that a hen is t in when she begins to sit. Here is his letter:

"I think Mr. O. P. Phillips' experiment as to whether or not hens set because they are too fat goes a great ways to prove that fat has nothing much to do with it, as his experiment has been my experience for years. I generally keep from 150 to 200 Brown Leghorns, and during the winter I try to keep them as fat as possible, in order to prevent them laying, as I do not care if they do not lay more than enough eggs to keep my table supplied I do this in order to keep them healthy, and in good condition, and have very little trouble from disease, and about February 1st I begin to ease them off in order to have them start rapid laying about March 1st, at which time I need all the eggs I can get to supply the demand for eggs for setting, and I have found with few exceptions that when they want to set they are in comparatively poor condition, and in many cases I have found them so thin that I would not set them as I did not think them fit to undergo the strain of setting. Understand by this that I do not starve my stock by any means during the egg-producing period, as I believe in helping the hens all it is possible during the laying period, but I do not feed to keep them fat. I believe there is something more than fat, or the want of it, that causes hens to wish to set; certainly not for the want of eggs to lay, as I have found upon opening a hen that has wanted to set, eggs in all stages of development; in other words my hens are fat when they start to lay and thin when they want to set."

Mr. Devlin, in the above, makes several admissions. One is that he *prevents* laying by keeping his hens *fat*. Next, his hens are Brown Leghorns, which are *supposed* to be non-sitters. If Brown Leghorns are kept in a poor (or thin) condition we never knew one to sit. It is possible that there are exceptions. We do not claim that all hens are alike. We affirm that a hen is usually fat when she begins to sit, as it is nature's method of providing for her when on the nest, and that when hens are too fat to lay they go on the nest to sit because they are then unfit to lay. We do not claim that a pullet which has never layed an egg will become broody when fat.

HOW MUCH MOISTURE.

A reader at Malden, Mass., got sixty-six chicks from sixty-six eggs, and thus states in regard to the moisture used, giving his experience with an incubator:

I thought that I would let you know the small amount of moisture required to hatch chickens. I put in one-eighth of an inch on the nineteenth day and got sixty-six chicks from sixty-six eggs."

The above does not state how *much* moisture is given, as a pint of water in a pan, one foot square will evaporate four times as fast as when in a pan six inches square and it will not give off any more moisture if a foot deep than if only an inch deep. It is not the *quantity* of water, or the *depth*, that controls the amount of moisture, but the *surface* exposed. The above shows, however, that no moisture was given until the nineteenth day.

MR. HINKLE OPENS HIS BATTERIES.

Mr. W. S. Hinkle, Russell, Kansas, is a gentleman who does not fear speaking right out in meeting. He sends us a letter, as below, in which he turns his guns on the poultry business, and he loads up with hot shot. We are pleased to receive his letter, however, and give extracts below. First, he says:

We are on our first year's subscription, and like the POULTRY KEEPER well, but a person knows as much about poultry when he finishes as he did when he began. Like in religion, everybody differs, and one does not know "which is the other.

Well we are pleased to know that he likes the paper, for that lets *us* out. He has only taken it a year, while we have been at work *forty* years in poultry, yet we do not know it all. Of course people will differ in views, even on religion. Cattlemen, horsemen, scientists, and farmers differ. Nothing is settled in this world. But *some* of them succeed.

There is no doubt money in poultry, but who gets it? The railroads seem to get the most under the head of transportation charges.

Just so, Mr. Hinkle, and they get it from all other classes, but business does not stop. Many persons hammer the railroads, but on election day they forget it all.

I got circulars from all incubator makers that I saw advertised. Nearly all figure seventy-five cents a chick, and leave a *large profit* on hand to the fellow who buys the machines and does as they say. Somehow they forget, in their estimates, to add "transportation charges," and commission for selling, which materially reduces the thing. Then we get seventy-five cents a chick perhaps a week or two in a year, and as one does not know which week it is, he may miss the golden opportunity, and likely will. We get at present from fifteen to twenty-five cents per chick in the Western and Chicago market; cost of shipping and commission off, which leaves barely nothing. Figures look nice on paper, but sometimes they lie outrageously.

Correct, you are, for prices vary on chickens, corn, wheat, pork, land, sugar, cattle, sheep, etc. Even "transportation charges" vary. We have given prices three times, for every week in the year, for poultry, and but little variation occurs, and you have time and again been invited to get that issue and learn the prices for a whole year, in New York, Boston, and Chicago. Incubator men cannot regulate railroad charges. Mr. Hinkle then says:

What's the matter with your readers that they can't construct a device to keep the chicks from kicking over the thermometer when they kick the shells off? We got tired of their foolishness, and just constructed a device to hold the thermometer and let them kick."

So you then got down to business yourself. If *somebody* would not construct a device you determined to do it alone. You were right. That is the spirit to manifest in the poultry business.

If from ninety-nine to 103 degrees is not the temperature, pray what is the temperature? If it is 103 degrees straight through the whole hatch, what machine will keep it there? We get tired and sleepy watching machines at night.

All instructions say that 103 degrees is the correct temperature, and all machines are made to keep such a degree if possible, but machines have no *brains*. You must depend on yourself some. It pays even to watch an incubator at night when a big hatch is expected. Many enterprises require watching at all hours.

The article on "Big Chicken Business" sounds honest also. But where the "Big" comes in with six chicks out of $42 worth of eggs we fail to see. We can't afford to carry on such a "big" business as that.

Why do enthusiasts figure on fifty cents, seventy-five cents and even $1.00 a pound, when but for a short season in the year they get it. This spring's chicks now bring fourteen to sixteen cents a pound in Chicago, and will come lower yet the rest of the year. Take freight and commission off and what is left to the party engaged in raising them? You object to engaging in mashing potatoes for chicks in last issue. We bought and paid for a book, "How to raise Chicks" from the POULTRY KEEPER and the bill of fare has *mashed potatoes* among it. I guess this poultry business is a humbug.

We objected to *mashing* potatoes per large numbers, as it entails too much work. Mr. Hinkle considers the poultry business a *humbug*. If he had said that he lived in Kansas, far from market, and was at the mercy of a grasping railroad company, he would have been nearer the mark. He has taken the POULTRY KEEPER for a year, paid fifty cents, and found that the fifty cents was well invested, but he could not succeed with so many obstacles in his way.

We trust that Mr. Hinkle will not consider this as in any manner discourteous. We respect him, and only wish to present two sides to our readers.

BIT TO PREVENT FEATHER PULLING.

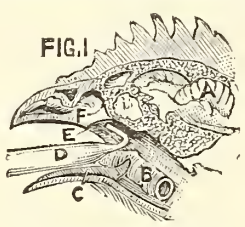
A novel arrangement for preventing feather pulling is the poultry bit, which is simply a small plate with flexible wires, as shown in the illustration at Fig. A. The plate is placed in the beak of the bird and

POULTRY BIT—FIG. A.

POULTRY BIT—FIG. B.

fastened in position by passing the wires through the lower portion of the comb. The bird can pick up corn or other grain but cannot close the bill on a feather. In a short time the vice is forgotten and the bit removed for future use.

In the illustrations below we show how to use a syringe with a bent tube, which may be sometimes necessary in cases of roup or stoppage of the nostrils from any



THE BENT SYRINGE.

cause. Fig. 1, on the left, will give the reader some knowledge of the anatomy of the mouth, throat, and nasal passages, as the illustration was taken from the head of a bird that had been cut into two parts, for that purpose. Fig. 2 explains how to use the syringe from the outside of the beak.

THE BENT SYRINGE.

It may also be used on the inside, as shown at Fig. 1, which is the real object of the syringe.

The poultry bits and syringe are the inventions of Mr. W. H. Wigmore, 107 South Eight street, Philadelphia, the well-known manufacturer of caponizing instruments, poultry markers, and other such appliances and who has done much to contribute to the interests of those interested in poultry.

THE GAPE WORM.

Mr. George Wentz, Catonsville, Md., sends us a letter from Dr. C. W. Stiles, of the Bureau of Animal Industry, who gives the following: "The disease of poultry known as "gapes," "verminous tracheibronchitis," or "Syngamosis," is caused by a nematode (round worm), to which V. Siebold has given the name *Syngamus trachealis*. The parasite belongs to a family (*Strongylidae*,) the members of which do not require any intermediate host for their development. Accordingly, we should not expect to find this worm as an obligatory parasite of the earth-worm. It is, however, beyond question, that chickens may occasionally become infected with the parasite in question by swallowing earthworms. This point will be evident from the following account of the life-history of the parasite.

The adult parasites are found in the trachea of poultry, the male being very firmly attached to the female. Numerous eggs are formed in the female parasite, and in each egg a small embryo is developed. Females 20 m m in length have fully developed embryos in their uterus. According to Cobbold and Megnin these eggs, which contained embryos, are not laid, but they escape from the adult worm only after a rupture of the body. This fact is easily understood when we recall that the male is intimately united with the female at the height of the rubra, so that the genital opening is practically sealed.

If the adult parasite is now coughed up by the affected chicken, or if it becomes liberated through the death of the fowl, the eggs will become scattered on the ground. They may remain unchanged for some time, or in a warm, moist medium the embryo may escape. Should these eggs, or embryos, be swallowed by other chickens, they will gain access to the trachea, and cause the "gapes." If an earth-worm should happen to swallow any of these embryos or eggs, the latter will retain their vitality for some time, and will infect with gapes any chicken which happens to devour this particular earth-worm. Thus it is clear that the earth-worm may transmit gapes to chickens by acting as a carrier of the embroyos or eggs, *but that the earth worm is not a necessary factor in the transmission of this disease* is equally apparent.

Dr. Walker observed that the embryos of *Syngamus trachealis* would retain their vitality when swallowed by earth-worms, and that birds contracted "gapes" upon swallowing these earthworms. (For Walker's see Second Annual Report, Bureau of Animal Industry, U. S. Dept. Agriculture 1885, p 274-277.)

Prof. Megnin infected a parrot with "gapes" by feeding to it some of the female parasites containing embryos. (For Megnin's experiments see a translation of his article in "First Annual Report Bureau of Animal Industry, 1884, p. 281-296.)

Prof. Ehlers fed eggs of *Syngamus trachealis*, containing embryos, to birds, and after twelve days he found copulated parasites in the trachea.

From the account given above it is clear that fowls may contract "gapes" by any of the following means:

1. By swallowing eggs or embryos of *Syngamus trachealis* which happen to be in their food or drinking water.

2. By swallowing the adult female parasite filled with eggs, which has been coughed up by some other fowl, and which on account of its reddish color chickens might mistake for an earth-worm.

3. By swallowing earth-worms, which may, by chance, happen to contain the syngamus eggs or embryos in their digestive tract.

The knowledge of these three possible modes of infection suggest several very practical means of preventing the spread of this disease.

1. As soon as it is noticed that a flock is affected with gapes, *the infected chickens should at once be isolated* and the healthy members of the flock should be placed on other ground where no infection with eggs exists. The infected chicken-yard should not again be used for at least a year.

2. *The bodies or at least the entrails, including the trachea, lungs, etc., of all animals dying from this disease should be burned.* If the bodies are simply buried the earth-worms may bring the embryos to the surface and thus infect the rest of the flock.

3. Poultry yards should be provided with drinking troughs, so that the fowls will not be obliged to drink water from contaminated and stagnant pools.

4. Poultry yards should occasionally be treated with lime in order to destroy the embryos of the parasite.

5. During the season in which the disease appears chickens should be kept housed until after the sun is well up, say until eight or nine o'clock.

ONLY THE GAME CHICKS DIED.

A Texas reader has a lot of chicks and only the young Games die. He explains his case in the following letter, saying:

Can you tell me what is the matter with my young chicks? I have raised only one Game chicken this year. When about one week old they begin to droop, just a little on the first day, and on the second, show signs of great weakness, their wings drooping to the ground, with weakness in the legs and a running off of the bowels that clog at the rectum. I have watched for lice but failed to find any. On the third day they *always die*. This disease affects my *Games only*. With the others I never have any trouble. I keep my hen house well disinfected with lime and ashes. I also dust the chicks with sulphur about once a month in dry weather, I keep plenty of fresh water in the yard, keep the yard clean and feed cracked corn and wheat in small quantities. I have also tried a little copperas in the drinking water.

First, we will state that young Games feather very rapidly, and are hard and close feathered, hence they are more readily attacked by lice than other chicks, (we mean especially the large lice on the heads), and they are also sooner subject to weakness owing to debility from rapid feathering. We do not claim that lice kills them, however, for the writer states that he feeds cracked corn and wheat to chicks under three days old. Such food may answer for *some* chicks, but not for Games, as they require more nitrogenous food. We are surprised that the other chicks thrive on the food. Keep ground bone before them, feed a soft boiled egg, mixed with cornmeal (scalded), to a dozen chicks, twice a day, for a week, and feed screenings twice a day. Give finely chopped meat, milk, and cooked food of any kind.

THE COST OF POULTRY.

Repeated experiments show that the cost of a pound of poultry is not over six cents, when food is fed liberally and of the best quality, and five cents is nearer the average cost. This cost is only for the food, however. There are other expenses to be added, such as the interest on capital, labor, etc.; but the real outlay, in order to produce a five-pound fowl, should not be over twenty-five cents for food. Just what profit to expect depends upon the prices obtained, and it is a matter for each one who is interested to calculate for himself.

Many persons make the mistake of placing all the anticipated expense on the food. The heaviest expense, if large numbers are kept, is the labor, as it is an item that must be paid for, whether the owner does the work himself or employs an assistant. There are also other expenses, such as the occupancy of the land, the cost of the buildings, fences, appliances, and the keeping of the same in repair. At certain periods the hens will be unproductive, especially when sitting or moulting, and even the mode of feeding may influence the cost of the eggs by failing to manage in a manner so as to keep the hens in good laying condition. The expenses of shipping, dressing and commissions all enter into the whole, and affect the profits to a certain extent.

Much depends on the first cost of the chick. In the winter, when eggs are high, each chick will cost three cents before it comes out of the shell, if each egg produces a chick, which is not probable, for it may so happen that in order to secure a chick it may require three eggs, a large number often proving infertile. If 100 chicks are hatched, each costing nine cents for eggs, the cost of each chick will be eighteen cents should one-half of them die. Such mortality may not occur; nevertheless it is possible, and hence it is plain that the first cost of the chick depends on the price of the eggs used for incubation, the number of eggs proving fertile and the number of chicks raised after they are hatched.

When we state that a pound of poultry should not exceed six cents for feed, the total cost of the first pound, allowing twelve cents for cost of eggs and losses of chicks, will be eighteen cents. The chicks will not be so liable to loss after they weigh a pound; hence an additional six cents for the second pound, which, added to the first, brings the cost to twenty-four cents, or twelve cents per pound. Hence, the more rapid the growth, and the larger the chick, the cheaper the cost, as the greatest risk is when the chick is very young.

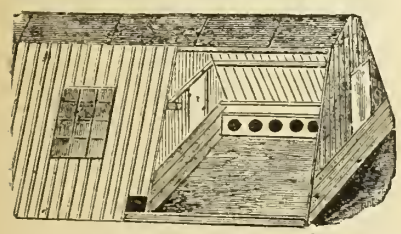
In connection with the cost, then, is the matter of using some breed that grows rapidly, and which will attain the greatest weight in the shortest time on a certain proportion of food. The common fowl will not serve the purpose at all, but the hens of the common breeds may be mated with Brahma, Plymouth Rock or Wyandotte males, and if then a selection of the best pullets be made, and pure-bred males used, there will be a further improvement. The proper mode, however, is to procure some pure breeds and keep off from mongrels, as it is cheaper to begin with pure breeds than it is to grade up, a process which takes too much time.

CHEAPEST OF ALL HOUSES.

In proportion to cost and utility, the poultry house here given, designed by Mr. J. L. Harris, Cinnaminson, N. J., is perhaps as cheap as any that can be suggested in proportion to the greatest available space. The *roof* is always the most expensive part of a house. The studding and rafters are also expensive items. We propose to get rid of much of both the roof and the studding, which will be noticed by reference to Figure 2. Before beginning the description, we will state that although we give the size shown here, yet the house may be of any length desired, while boards 8, 10, 12, 14, or 16 feet may be used, according to preference, but we will use for convenience, boards ten feet long and one inch thick, which are nailed straight up and down, the joints covered with strips two inches wide. We would suggest that before putting on the strips, the boards be covered with building paper, (price one-half cent per square foot), and painted with linseed oil; or cheap tarred paper may be used; as the strips will hold the paper on firmly, and the house will then be water-tight and frost-proof.

No posts are required, as the boards are nailed to six stringers (2x3 or 3x4) running lengthwise the building, the ends of which are shown at *A A A A A* Figure 2. The roof is made by fastening boards to cross pieces, and tarred paper placed over the boards. The cross pieces are simply boards four feet long and one inch thick, and nine inches wide, slightly rounded. The partitions are made by nailing two boards (each one foot wide) at the bottom, with lath running straight up and down. The bottom boards and top cross pieces tie the building together. A few strips, running crosswise, may be needed for fastening the lath partitions.

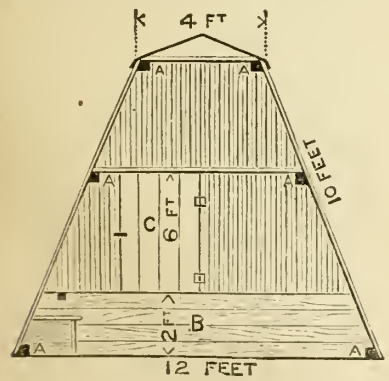
For a building twelve feet on the floor, four feet on the roof, and ten feet on the sides, the cost will be about as follows:



POULTRY HOUSE—FIG. 1.

Boards, 2,000 feet for sides (less space taken up by the windows) at $20 per thousand, $40; roof, 400 feet, $8; ends, 200 feet, $4; partitions, bottom boards, 250 feet, $5; doors, etc., 200 feet, $4; studding (lengthwise), 600 feet at $20, per thousand, $12; for partitions, etc., 400 feet, $8; total for lumber, $81. Tarred paper for roof will be, for paper, paint, etc., $12, while paper for sides, and also strips, will be about $15, while hardware and incidentals will add about $10 more, making a total of $128 for a house 100 feet long and twelve feet wide, for *material*. This estimate is a rough one, and may not be correct, but it will convey some idea of the cost. The labor will be extra, but the house is very simple in construction, and can be easily built. Windows will be extra, of course.

The advantages of this house are: 1. Its cheap cost. 2. Its form braces it firmly. 3. No posts or uprights are required, except for doors. 4. The roof may be nearly flat, and of cheap material. 5. It gives the



POULTRY HOUSE—FIG. 2.

greatest available space on the floor for the least money. 6. On opening the doors the two foot boards prevent birds from passing by you, nor can they see each other from adjoining apartments, when on the floor. 7. It is a covered shed in bad weather, as a flock of a dozen hens may have a space 10x12 feet. 8. It can be built of sixteen-feet boards, if preferred, and the upper part used as a pigeon loft. 9. A carpenter is not required to build it, as the plan is simple. 10. It may have a board floor, if preferred. 11. The sides cheapen the cost of the roof. 12. The windows may be of any width or size.

If you believe that a silver dollar is worth only sixty-four cents, just send them to us. We will *redeem* every one at a hundred cents, in subscriptions. Try it.

FAT HENS AGAIN.

Mr. O. P. Phillips, Amo, Indiana, is taking the proper course in discussing an important subject. We are always pleased when a reader comes boldly to the front and maintains a position which in his opinion, is correct. On the subject of fat sitting hens Mr. Phillips says:

In reply to the comments of the associate editor on my experiment, and the fat hen question, I will say that I have no desire to provoke a controversy with one so well qualified to handle any question pertaining to poultry; but since his experiments and mine were conducted on different lines, I *will* claim that mine were correct and his *wrong*. He seeks to *force* an effect, and I will not deny that he has probably *made* the hens to become broody, but, so far, neither the experiments nor authorities which he maintains, are proof of the point at issue, viz: "That when a hen is *made* fat she becomes broody," and, ditto, "when she has *taken on* more than the necessary amount of flesh."

Now can a hen be "*made fat*" without *increasing* her weight? Can she "*take on*" flesh without becoming heavier? Do the experiments show that these hens were actually *heavier* and *fatter* when becoming broody, than when first commencing to lay? The fact that one broody hen was heavier than those not broody does not prove that she had *gained* in weight. Mr. Boyer states that the "first effect was *heavy laying*," and every one knows that *heavy laying* is not productive of increased weight in the layer. That the feeding has much to do with the production of eggs I do not doubt, and I do not doubt that the *number of eggs produced* has much to do with the desire to incubate, and if the editor had stopped at saying that "*as a rule*, a hen only desires to sit when she has laid a certain number of eggs," he would have been nearer the right place.

If Mr. Purvis' Light Brahmas are still laying, I dare say there *will* come a time when they will want to sit, and when that time *does* come I will wager a straw hat that they will weigh *less* than when they commenced. What "huckster" or poultry dealer does not know that hens bought in March are from one to two pounds *heavier* than those bought in May?

Does this indicate that hens *gain in weight while laying?* I wish Mr. Purvis, and a hundred others, would take particular note next spring and see whether their hens gain or lose weight, before desiring to incubate, and report the results in the POULTRY KEEPER. Meanwhile having *lost* some of my own avoirdupois (not over this effort) I will *brood* upon this question until I can experiment further.

Our friend must not fear what he calls "controversies," for discussions are always valuable. No one is perfect, and reasonable discussion always brings new things to light. Mr. Phillips claims that our experiments were all wrong, as they were not conducted on the same line as his. A very correct thing for the opposite side to say! In the July issue Mr. Phillips makes the remark: "Hens do *not* sit because they are fat, but rather because they are *lean*." Then Mr. Phillips is certainly on another line—a hen must be starved into setting proclivities. He admits that it takes a certain amount of feed to sustain the body, and to keep the machinery of life in proper motion. Admitting such fact, he knows that in order for the hen to make eggs she must have a surplus of material. In other words, she cannot spare any of the food that is necessary for her to keep alive, and when she stores up this *extra* supply of material she converts it into eggs. If getting a heavy layer fatter than would make her standard weight, can Mr. Phillips explain why, in course of our experiments, we have been able to make a Leghorn pullet and a number of Minorcas *sit?* At this writing our Leghorn pullet is brooding thirteen chicks hatched out of fifteen eggs. Besides, we have three Minorca hens with large broods that they brought out themselves, and another Minorca hen sitting on a sitting of duck eggs, to say nothing of several in the laying pen that are now getting broody. What made them broody? Why should they—non-sitting birds—desire to sit? It was the extra weight that was given to their bodies while they were laying heavy, and they will also *gain in weight* while laying, if fed heavily on grain. When Mr. Jacobs brought up this theory, we too, like Mr. Phillips, were of the "doubting Thomas's," but when we made a trial of the matter, we then found by our experiments that we could not only get the non-sitting breeds to become broody, but actually keep the "inveterate sitters" from getting into that state, we had to admit that the theory was correct, and Mr. Phillips will find it so, after he has *brooded* a little while longer over the question.—ASSOCIATE EDITOR.

"MILLER PURVIS" ON FAT SITTERS.

"Miller Purvis" is still at work with the experiment of making Leghorns sit and changing the Brahma to a non-sitter. As Mr. Phillips has kindly taken up the subject for discussion, and with "Uncle Mike" and "Miller Purvis" at work on the matter, our readers will surely gain more light on sitting hens than has ever before been presented. In a letter to us, headed "Some Notes," "Miller" says:

In the July POULTRY KEEPER I told about making my Light Brahmas lay all the season. That letter was written May 26th. Soon after it was written I turned my Light Brahmas out for the summer, and for a week they almost stopped laying. Then they began again, and now they are laying as well as at any time in the season (June 30th), and last week they laid just a dozen eggs, or six each. Since writing that letter I have had six out of thirty-three Brown Leghorn hens begin to sit and three of them have had eggs put under them. One is sitting on her second term, the chicks hatched the first time have been given to another hen. My *Leghorns are very fat* and the one that is sitting for the second time is not at all poor. I keep them in a room by themselves, and give them all the *cracked corn* they will eat, and plenty of water. I am going to see how long she will sit.

To explain the matter we will state that the *food* can be used to regulate the sitting propensity, and although a hen may be laying regularly she will gain in weight. It must not be overlooked that *flesh* is not altogether *fat*. Feed a hen on grain and other foods, and she will not be able to appropriate all of the carbonaceous (fat, starch, sugar, etc.) matter into eggs, although all of the nitrogenous and mineral elements may be utilized for the albumen (white) of the eggs and the shells. Gradually this surplus carbonaceous material will be stored on the body in the shape of fat, and after awhile the hen will cease to lay and become broody. The Brahma is more disposed to become fat than the Leghorn because she is quiet, but the active habits of the Leghorn enables her to dispose of much of the fat by utilizing it as *force and energy*, as she takes exercise by constant foraging.

What Mr "Purvis" (a cognomen title) is doing is to feed his Leghorns on more carbonaceous matter than they can utilize as fat or force, and they become *broody* in consequence. His Brahmas are fed with food containing less carbon and they refuse to sit. We have tried the same experiment and succeeded. It is even possible for a hen to be heavy in weight of *flesh* and yet not be *fat*, as nature permits of the storage of nitrogen, as may be witnessed in increased muscles from exercise, and yet she may weigh less when having more fat and insufficient exercise, though more probably fat adds to the weight. A hen may also be weighed when the embryo eggs add their weight, and yet not weigh so much when she begins to sit, although she may be in a fatter condition than when laying the eggs. There are, then, several factors to be considered.

The following addition to the "Notes" are valuable. Will insect powder kill chicks in the shells? Feeding oatmeal to chicks, brooders, and a novel invention, are also given below. Mr. "Purvis" says:

A friend told me that he killed a lot of chicks by putting insect powder on the hen to kill the lice. She had been sitting about ten days, and while two other hens sitting on eggs from the same pen hatched well the one powdered did not hatch a chick. I tried it on one of my hens, and the eggs, though well started, stopped right there, rotted and I begin to believe there is something in it.

I have feed my chicks on oatmeal largely this season, having gotten an opportunity to buy it at $1.50 per hundred pounds, direct from the mills, and I believe it is the very best thing I have ever fed.

A writer in the June POULTRY KEEPER says it is useless to try to get chicks to go up steps to get into a brooder, and argues that a hen does not sit on top of a fence to hover her chicks. I have for five years, used a brooder that the floor is a foot from the ground and I have never had the least trouble in getting the chick to go in from the first day. When first put in they do not all go up the bridge, but in two hours every one of them knows the way. I suppose there are a hundred such brooders in my immediate neighborhood, and very few of us have any use for a low down brooder. In the elevated brooder the lamp is under the floor and this keeps the floor warm and prevents dampness, and the chicks do better than they would if they were on the ground.

I have invented a first class drinking fountain for chicks. It is simply a basin filled with pebbles as large as a pigeons egg. The water is poured in among the pebbles and the chicks drink from the cage or if they prefer get on the top and drink, standing on the pebbles and not getting at all wet. This is cheap, easily cleaned and can be made by any one.

The hint given above, in regard to insect powder killing chicks in the shells is worthy of attention. We will be pleased to hear from any of the readers who may have had experience also. Now is the time to try it.

HEAD LICE EVERY TIME.

Although the sign—"Look out for the locomotive"—is repeated in nearly every issue, in the shape of "Look out for lice," yet dozens of letters come, all desiring to be answered by mail, simply because readers do not read the facts given until the trouble comes. A lady, who does not desire her name given, writes:

It would seem as if any one could get all the information necessary for the raising of chickens from the POULTRY KEEPER, but I find so much that is confusing.

My first chickens always do finely, but I lose so many of the later ones. They will be doing finely for a week or so, and then they commence to go, stand around listless, don't care to eat, some times with full crops and don't seem to think life is worth living. I have fed at first bread with milk to drink and later cracked wheat cooked, whole wheat, some potatoes, water cress, and occasionally some meat, with all the milk they will drink.

I keep them in a house but they can go out as they please, without hens, with hot water cans in boxes to run into during the day, and in boxes or baskets at night. Is there anything I could use from the start in their feed or drinking water to keep them in good condition, for they always are nice in the start. If I did not have the same trouble every year I should think it was the fault of the breeding stock, but as it is I suppose it must be in the feeding. I think it is from overeating, weak digestive apparatus, but I do not know how to prevent it. I am discouraged and have about decided to stop trying, but I would like to raise some of this year's hatching if possible.

If you will answer this by mail it will save time, but if you do not care to do so please do not publish letter when answering in the POULTRY KEEPER. I have been unable to discover any lice.

All of the above means that she found no lice—the little mites—yet lice were doing the mischief, on the heads, a few drops of sweet oil, well rubbed on, being the remedy. The letter above gives the symptoms. It is as easy (and easier) to raise late chicks as to raise those that are early, if readers will look for the head lice. Remember the watchword for summer—look for the large head lice.

OVERFEEDING OR LICE.

When one loses a lot of chicks and fowls every year there must be a cause. Mr. W. R. Bloom, Klemme, Iowa, states his case as follows:

A large number of my hens and all cocks are dying. The first I notice on them they begin sitting around by themselves, and their combs begin to fade, which get nearly white before they die. I have a good warm house for them, keep it cleaned and white-washed, and have plenty of fresh water all the time. For feed I have meat scraps and every kind of grain which they pick up around my warehouse and corn cribs. I have raised chickens for three years and lose from fifty to seventy-five every year.

In the present case—*look for lice*—either the mites or the large head lice. If your hens can get all they wish around a warehouse they are also probably too fat, being overfed, but the symptoms given are those lice.

MAKING THE HEN LAY.

It is the perfect food that produces an egg, because the egg is composed of a variety of substances. Grain is rich in starch and fat, but deficient in flesh-forming and bone-forming substances. In the food, these substances are scarce, and the hen is compelled to eat a large amount of starchy food in order to derive the minerals and flesh-formers, and in so doing the excess of starch is converted into fat, a condition not desirable. Fortunately we can give her, in a direct manner, the mineral and flesh-forming materials so necessary for her purpose, in a concentrated form, and in the shape of egg foods composed of the very materials that are identical with those composing the egg itself, thereby reducing the amount of grain required and producing the eggs at a much lower cost than from excessive feeding. When this is done, the hen—the egg machine—has the complete raw material, and there will be no clogging, but the eggs will result as a natural consequence of a fulfillment of her mission.

A RECORD OF THIRTEEN HENS.

Mr. B. DeForest, Fort Howard, Wis., sends us a record of his thirteen White Leghorn pullets, and gives the number of eggs layed for each day. He also bought some *scored* birds, and compared them with his own. He says:

"The following is the record of my thirteen White Leghorn pullets, hatched May and June, 1892. They began laying October 11th, and did quite well all the winter. The record, by days, for April and May, is as follows:

April.	Eggs.	May.	Eggs.
1	9	1	10
2	9	2	9
3	10	3	12
4	12	4	10
5	8	5	11
6	12	6	10
7	10	7	11
8	13	8	12
9	9	9	10
10	11	10	12
11	10	11	12
12	11	12	13
13	10	13	11
14	12	14	12
15	12	15	9
16	9	16	10
17	11	17	12
18	11	18	12
19	13	19	11
20	10	20	11
21	9	21	8
22	9	22	8
23	12	23	10
24	12	24	11
25	12	25	7
26	11	26	7
27	8	27	9
28	13	28	10
29	12	29	7
30	12	30	7
—	—	31	7
Total,	322	Total,	311

You will see by this that the thirteen pullets layed 633 eggs in the two months, or about 48¾ eggs each, which is pretty good, I think, considering the fact that they were in a yard only 10x30 feet, over half the time. This spring I bought a breeding pen of Barred Plymouth Rocks, and paid a high price for them, the pullets scoring 92 to 93½ points, but how different they layed from my Leghorns. The five Plymouth Rock pullets layed only 112 eggs up to date. I received them April 6th, and they have had a large grass run. This shows that some people breed for scores, and not for practical purposes. The latter, in my mind, is the only thing that can keep up the poultry interests of this country. I tell you we need more breeds that *will lay eggs*. We have plenty that will furnish meat now. There are hundreds of so-called poultrymen hunting around everywhere for some old mongrel, to boom and make dishonest money on, and this very thing is doing more to hurt the poultry business than anything else."

The record is a good one, and we endorse all that he says in regard to *scores*. He uses *pure-bred* fowls, as every poultryman should do, but he believes plenty of eggs will pay better than perfect combs and tocs. If scoring gave the *truth* there might be something in it, but as it indicates only what may be erroneously jotted down with a pencil it adds nothing to the value of a fowl. What the people desire is the breeds that score up high on *eggs*.

ROSE-COMB MINORCAS.

Mr. Northup having replied to Mr. Theo. Campbell, Lexington, Ky., the latter gentleman claims the privilege of a few words on the subject, and we give his letter below:

Mr. Geo. H. Northup in the June POULTRY KEEPER does me injustice by quoting *part* of a confidential letter written him at his request, and as a fellow fancier I have concluded to reply. In my letter to Mr. Northup I said that my Rose-comb Minorcas were descendants from a cockerel with a rose-comb hatched from eggs produced by Single-comb Minorcas. This stock, in the hands of a relative, and an old fancier in England, was bred pure for years. Is it not as possible to produce a Rose-comb cockerel as a split-comb pullet, as Mr. Northrop claims to have originated his in that way. About the same time I *did* originate a strain of Rose-comb Black Minorcas by careful and scientific *mating*, in order that I might have English and American blood to use without inbreeding. There are other Rose-comb Minorca breeders, notwithstanding Mr. Northup claims to have the exclusive right in free America. Mr. A. E. Walton has bred Rose-comb Minorcas for years. That he has good stock I am well assured, having one of his male birds in my breeding yards now, which is a pure Rose-comb Black Minorca. I dare say that I have done as much to improve thoroughbred poultry as Mr. Northup, and as to my being reliable any one who cares to do so can refer to any of the banks or business men of this city.

We will state that we have not had a single complaint from any customer of Mr. Campbell, and he has sold a great many Rose-Comb Minorcas. His reliability cannot be questioned. He is Secretary of the Kentucky Poultry Association.

We will state, also, that whenever we open our columns to permit of allusions to breeds owned by any of the breeders it always leads to a discussion, and not a discussion of the *breed* but of the *reliability* of the breeder, which has nothing to do with the worth of the breed at all. We do not wish the columns of this paper used for any purpose but to educate readers.

MRS. MELLETTE AND OUR ALFALFA.

That excellent lady and gifted writer, Mrs. Emma J. Mellette, of Harris, Colorado, reminds us that we made several recommendations in the POULTRY KEEPER recently that do not correspond with former issues. She is correct, as an article from another paper was given no credit, through mistake. In the *Midland Poultry Journal* she says:

"As to green feed Colorado has the advantage over many other states in her alfalfa, and a better feed could not grow. The writer once had the pleasure of sending to P. H. Jacobs of the *Poultry Keeper* a pound of alfalfa seed. The last I heard of it the gentleman reported it 'up as thick as hair on a dog's back.' How is it now Brother Jacobs? Could the alfalfa stand your New Jersey winters or has it been dead long ago?"

We will state that the alfalfa seed germinated, came up all over the ground, but we found that it should have been planted in rows, and cultivated, as the weeds crowded it out. The season was also dry, and the soil too warm. We intend to try another experiment, however, though we doubt if it will succeed in Southern New Jersey.

CUREING FISH AND CORN FODDER.

It is an advantage possessed by some to be able to secure fish and food for poultry, and if the fish can be preserved without salt quite a lot of material can be stored. A reader in Boston asks:

I noticed in one of your papers a receipt for cureing fish for winter use for poultry. Can you give any other receipe? Salt-water fish are very plentiful near my place. Can you also give me a recipe for curing corn fodder?

We will state that in our last issue (July) we gave full information under the heading of the "Sulphur Process." So far as cureing corn fodder is concerned (for poultry) pull the *blades* off the stocks when the ears are glazed, and before the corn ears are dry. The blades are fastened together in small bundles, cure in the sun by hanging them on the stalks, kept under cover at the barn, and when wanted for use are cut very fine and scalded.

RED CAPS.

Trying to claim too much only injures a breed. It is now too well understood to receive the consideration of even a novice. A writer at Centreville, Iowa, sends the following:

Is this description, taken from a poultry catalogue, correct? "The Red Caps are noted for their wonderful egg-producing qualities, laying a fine, large egg, and a lot of them, said to be equal, if not superior to the Leghorn family. Being large in size they excel the Leghorn for market. Meat tender, juicy, and finely flavored, and for beauty they are simply grand. Standard weight for cocks seven and one-half pounds, hens six and one-half pounds. They are the great English layers."

The above is nearly correct so far as laying is concerned, but the table qualities are something not claimed. They are not as hardy as the Leghorns, and do not thrive as well in winter.

DEFORMED CHICKS.

From Winnipeg comes an inquiry in regard to deformed chicks, Mr. A. F. Preston, of that city, sending us the following letter, which calls attention to a very frequent occurrence:

"We have the hot-water incubator, and in the first hatch the chicks' feet seemed to be weak, and they could not straighten their toes. A great many were too weak to get out of their shells."

It is due to several causes, but usually too high a temperature when the toes are crooked, but if weak and not thrifty for the first twenty-four hours it denotes heat may have been low. We could not well answer the inquiry unless the details of hatching were given.

HOW MUCH CAPITAL.

An Indiana correspondent asks us a few questions which some others would wish to have answered. He says:

1. How much capital is required to make chicken raising a business, so that a man can make as much as a common laborer? 2. How much ground is necessary? 3. How many hens? I have an acre of woodland; would that amount to anything?

Estimating a laborer as earning $500 a year, he will require 500 hens, the cost of which, at fifty cents each, would be $250. The poultry house would cost *at least* $250, and the food at least $250. It would require $1,000 to *begin*. The proper plan is to begin with a few and increase each year. The writer of the above would fail, as his questions show that he does not know how to manage. An acre should accommodate not over 200 hens—100 would be nearer the number. The wood land will answer if minks are absent.

MOULTING HENS.

It is now time to give advice on feeding moulting hens, and the inquiry below, from Mr. R. C. Knapp, Greenville, Pa., is timely. He writes:

Some time ago there appeared in the columns of your valuable paper an article something like this, "Hens That are not brought to laying in six weeks from the time moulting commences are not properly fed." What can I feed my one year old laying hens to bring them through that period, and to laying in above time; or the shortest possible time? Long live the POULTRY KEEPER, the best poultry paper out.

First, keep moulting hens free from lice. Feed a variety, which means green food, some grain, and especially bone and meat. If they have a range give only one meal a day, which should be wheat, with meat and bone the next day, a pound of meat to a dozen hens. Twice a week, during dry weather, for a dozen hens, add a teaspoonful of sulphur to their food in some manner.

WHEW!!!

Here is a modest proposition, and one that we could not possibly entertain under any circumstances. It is from Lansing, Mich.:

I saw a sample of your paper. I am not a subscriber but will take the paper a year if you will inform me how to make money in poultry.

We cannot do it. The price is too low. You only promise for a year, and out of the fifty cents we may not make ten cents profit Then, again, it is not fair. You should go to the foot of the line and not try to crowd in at the head. If we should inform you how we fear that you might send it to some poultry paper, and have the "*how*" published, which would cause all the poultry papers to cease, for the "*how*" being known there would be no further use for them. Fifty cents on *promise*, with expenses deducted, will not bribe us. You must *learn* and you must *read* to learn. We might add that if we informed you *how* we doubt if you would even then understand. You must pull at the oars yourself, and *practice*.

MUST EGGS REST.

Some time ago the *theory* was launched out by some one who had it "in his mind" that eggs should *rest* for twenty-four hours, after arrival from the breeder, before placing them under a hen. A reader who bought eggs from a breeder writes us as follows:

Is it necessary that eggs be allowed to rest for twenty-four hours after being received from a distance before they are set? I got 100 eggs from a dealer, and though the hens set very faithfully and everything seemed favorable for a good hatch, I got only twenty seven chicks. The dealer claims that if I set them as soon as received it would be a sufficient explanation for the poor hatch. Is this true?

It is all nonsense. There is no vacuum in an egg, and the contents cannot shake. If they do not *rest* in the *nest* then we are unable to explain any better method of "resting." We have taken eggs from a box, placed some under hens immediately, and also "*rested*" some. We noticed no difference in the hatch. "Resting" has served as a pretext for some to explain poor hatches, and that is about all there is in it. The proposition on its face is ridiculous, for when an egg has to rest, to allow the contents to re-adjust, such an egg will become rotten. Once the contents are disarranged there can be no re-arrangement.

CASES FOR CONSIDERATION.

A reader at Syracuse, N. Y., sends us a letter which records cases—chicks and a hen—that are somewhat out of the regular routine of every day occurrences. He says:

DEAR SIR.—I would be gratified for a little information. I have just had a hen come off with ten chicks, eight of which being splendid. One, however, had no skin or feathers on top of head when hatched, and kept drawing its head backward until it would fall over backwards on its back. The other was blind when hatched, and had what appeared to be a scab on each eyeball, completely covering the ball of the eye about one quarter of an inch in diameter. Both chicks, otherwise appeared to be healthy. Two friends of mine have each been troubled with a hen which sat a time and then refused to sit, but would *stand* on the nest. They had sat about ten days. Can you give us any light in the columns of your valued paper?

We are unable to account for the misfortunes of the chicks, as the difficulties may be due to malformation, or some condition of the parents. The refusal of the hen to sit on the eggs is not unusual, as lice, a sore on the body, a bruise, or even pain in the limbs when sitting may cause her to stand on the nest.

PLUMS IN THE POULTRY YARD.

Fred Grundy has the following to offer in the *Rural New Yorker*, relative to plums grown, in the poultry yard by a Mr. Burton:

"The plum trees in our poultry yard yield a fine crop most every year. They are troubled but very little by the curculio. Not a weed or spear of grass grows among them. The birds kill the grass, and such coarse weeds as they avoid are cut off with a hoe, so the ground is perfectly bare. After the trees have bloomed. I go among them two or three mornings each week with a little wheat in my pocket and a mallet in my hand. At that time the fowls are very hungry and naturally at my feet and all around me. With the mallet I strike the stub of a branch—which has been previously sawed off for that purpose,—a sharp blow, and at the same time scatter a few grains of wheat on the ground under the tree. The fowls tumble over each other to get the grain, and every bug, beetle and worm that falls goes into their crops with it. I do this very early in the morning while the beetles, worms and bugs are chilly and off their guard, and while doing it wear a slicker to keep from being drowned in dew. The plums are very fine and better than any large fruit we grow.

Apple trees do well in the poultry yard and yield excellent crops. I have seen them fairly loaded with fine fruit when those in the orchard were bearing nothing to speak of. They should be trained rather high—not less than five feet—and the fowls prevented from using them for perches by having the flights of one wing cut of. With a pair of strong, sharp scissors the wings of a large flock can be pruned in a short time, and if done in the spring, will stay done until after moulting in the fall.

I have also grown some splendid Kittanning blackberries in the poultry yard. The canes grow six to eight feet long, and most of them were trained along the fences. Those away from the fence were cut back to four feet. The fowls never trouble the berries until they begin to turn red, and then they were shut out and kept out until the fruit was gathered. The berries were very large, luscious and sweet—simply immense!"

OUGHT TO RAISE DUCKS.

Judge Jeff Pollard issued a landlord's summons recently, sworn out by Thomas McDonough against C. F. Spice, asking for one month's rent and possession of the premises, No. 4221 Blaine avenue, at Tower Grove Station, occupied by Spice. McDonough said that he rented the house, for possession of which he had instituted suit, to Spice for $16 per month. Upon taking possession of the premises Spice placed in the cellar a large incubator for hatching chickens, which he claimed cost him $150, and put 600 eggs in the incubator. He alleges that they were about to be hatched out when the terrible rainfall of a few days ago flooded the streets in front of the premises, the sewer refused to carry the water off as rapidly as necessary, and the water in the pipes that connect with the sewer in the cellar backed up, flooding the cellar with water over three feet in depth, ruining the eggs in the incubator and damaging it considerably. When Spice's rent became due he wanted McDonough to pay for the eggs and the damage sustained by their loss, as they were about to hatch, as well as the damage done the incubator. This McDonough refused to do, claiming that it was not his fault that the water destroyed the eggs and damaged the incubator: that he did not rent the house to Spice for any such purpose. Spice then refused to pay the rent, and stated that he would enter suit for the amount of damages sustained by him against McDonough. Upon the refusal of Spice to pay his rent McDonough entered suit. McDonough says a number of the little chickens that had been hatched out would not have been drowned had Spice been raising ducks instead of chickens, and he advised Spice when raising fowls in a cellar to raise ducks and thereby lessen the chances of loss by water.—*St. Louis Republic*.

ABOUT PIGEONS.

The *American Poultry Advocate* publishes the following suggestions on pigeons.

Peas make a good feed for pigeons at any time.

Do not let your pigeons hang around the house.

Have your loft clean and it will repay you ten-fold.

My advice to a beginner is to commence on a small scale.

Odd birds are always quarreling; separate at once.

Arrange your quarters so that if necessary they can be confined.

When making new nest boxes have them large enough so that the pigeons can turn around in them.

Remember it does not cost any more to keep blooded than mongrels.

Remember last month was the time for pigeons to mate for the season.

Keep your loft well ventilated. You need not fear that your birds will catch cold.

If you are compelled to confine your birds, use wire netting for fencing. It is the best.

Always have a clean place to feed from, and do not throw your feed on the dirty floor.

Sprinkle a little pulverized charcoal into your feed once a week, it purifies the blood.

So far at possible keep only even pairs. Separate your odd birds from the main flock.

The Horning pigeon will live to be fifteen years old if given good care and nice clean quarters.

Young turbits are a very handsome bird to look upon when perched upon the roof of a house or barn.

Do not keep too many in a flock. Divide them off in separate quarters. They will do better and keep healthy.

Feed your short-faced birds on a hard floor providing it is clean, as it will give growth to their beaks wonderfully.

Many short-favored pigeons will die in the shell if not assisted out, their beaks being too short to pierce the shells.

Pigeon eggs hatch in from sixteen to eighteen days. A pair will be hatched in every month, except February.

Have your loft so arranged as to give plenty of exercise rather than to allow them to remain in a close loft. They will thrive better.

Squabs are ready for market at the age of four to six weeks. Raising squabs for market, if attended to properly, is a very profitable business.

A good remedy for blood feathers is mixing flour of sulphur with butter, and give a small pill about the size of a pea a few times in meals until they molt.

Your birds should have access to a bath, about twice a week, but on such days when they can get in the sun to dry off their plumage before night comes.

Have your loft arranged so as to give your pigeons all the room possible. Let them have a basin of water to bathe in and some sunlight to stand in and dry off.

Always have a good supply of fresh water in your loft, but do not let your pigeons bathe in it. Also have your vessels clean; if they are unclean it generally brings on disease.

When you have got a good breed hang to it. Don't be led astray by the boom of the day which you read of. They appear and disappear, but hang to your good breed and do not let go.

By giving your pigeons good care, good quarters, good feed, you will be able to keep your pigeons tame, and they will always stay around home. In the country is the best place to keep pigeons, on account that there is no danger of their straying away, but in the cities pigeons often stray away and cannot find their way home.

In starting out as a breeder, always get the best stock; then you will obtain prices like the prices you paid for them, if you wish to sell a few. Good birds cannot be had for less than $5 each, and sometimes more, if very superior in points near the standard. If you follow the above you will be a successful breeder. Keep your name before the public and it will not fail.

If you are lacking in patience, I advise you not to try breeding short-faces; you will not meet with success. The large number of varieties of pigeons now bred make a choice equal to every one who wants to keep a flock of pigeons for amusement or for profit; but there are a very few varieties that will score high. The short-faces is one of them; in my judgment, the queen of the land.

POULTRY AND PET STOCK COMPANY.

The Northwestern Ohio Poultry and Pet Stock Company, of Tiffin, Ohio, has been incorporated under the laws of Ohio. It is the first poultry organization ever incorporated in the State, and will make an effort to come to the front with the best exhibition in the second week in January, 1894.

The following directors have been elected by the company: J. J. Fleck, G. E. Halterman, Jeremiah Rex, Thomas Rex, Thomas Falkner, S. W. Rohrbacker, D. S. Biller and D. J. Stalter. The Board of Directors have elected the following officers: Hon. D. J. Stalter, President; G. E. Halterman, Vice-president; D. S. Biller, Secretary, and J. J. Fleck, Treasurer.

THE GREAT SHOW AT NARRAGANSETT PARK.

Narragansett Park, the site of Rhode Island's State Fair, has this year been the scene of extensive improvements. These buildings, which are used only once a year, would impress a visitor with their magnitude. Since the people of New England last centered there, over 16,000 feet of roof space has been built, connecting all the exhibition buildings, and making one of the largest roof spaces for exhibition purposes in this country.

This Association has been admitted into membership in the American Kennel Club, and this year are making a special effort to increase the kennel interests. A new building, 180 by 90 feet, has been erected, and will be used especially for the Bench Show to be held in connection with the State Fair in September. As $2,500 has been offered in premiums, and with the entrance fee at one dollar, it is the intention of the Association to make this show one of the great Bench Shows of America. A strong featuro of the Fair will be the Poultry Department. It will be held in a building 155 by 60 feet, which will be solely used for the purpose, and $2,000 will be given in premiums at this show with no entry fee charged. Two new Departments, Food and Domestic Science and Public School Work, have been added.

For the first time in the history of the Rhode Island State Fair, manufacturers and merchants are given an opportunity to exhibit and sell their products and stock in trade, upon a plan fashioned after the Merchants' Display in the Mechanics' Fair at Boston. A building 160 by 50 feet lighted by electricity and supplied with gas and running water, will be exclusively used. The interior will be painted and decorated, and attractive booths will be erected by the Association.

The Horticultural Show will be held in a building 160 by 40 feet. The premiums given for this show have been greatly increased, and it is fintended to have a floral exhibit of great magnitude.

The Premium List has been revised, enlarged, and improved, and will be the most complete ever issued. Plans for the re-organization of departments have been perfected, and important changes made for the better display of articles exhibited. The premiums have been greatly increased, and over 200 additions have been made to the list.

The grounds and buildings will be lighted by electricity, and for the first time in the history of the Park the exhibition will be kept open evenings. A double line of electric cars will run direct to the grounds in addition to the present line of steam cars over the New York and New England Railroad.

This is a great year for Poultry Men as the Poultry Industry is receiving an increased attention from all sections of the country. The bulk of the population is exercising more industry, economy, and good management in their daily life, and thus are awakening to the greater necessity of poultry and egg produce. The demand is steadily increasing, and as a result almost innumerable small, profitless farms and tracts of suburban land have been converted into bustling, thrifty poultry farms and yards. The Poultry Industry is one of the most prominent pursuits in the world and yet it is said to be only in its infancy. Its future looks bright indeed. Poultry men as a result are making strong efforts to perfect the varieties of poultry needed for the several purposes for which they are wanted. To this end Poultry Shows are held throughout all sections of the country where poulterers can come together and at the same time gain inspiration and profit from the fruits of each others' labors.

This year, in connection with the Rhode Island State Fair, September 18th to 22d, a Poultry Show will be held. A building 155 by 60 feet has been built for this show, having galleries twelve feet wide, and will be solely used for that purpose. It has a monitor roof, is well lighted and ventilated, and portends for the comfort of exhibitors as well as exhibits. Over $2,000 in premiums are offered, and no entry fee is charged for birds in competition. Free feed and free care will be provided. The prizes will be open to the world for competition, and the management of the Show confidently expect that the poultry men and farmers will respond, and send in their birds in great numbers. There is a strong Poultry Show Committee, with Mr. Harmon S. Babcock as chairman. The judges who have been chosen are men whose ability, integrity, and prominence will render them acceptable to the exhibitors. The exhibits promised indicate a great show of very fine birds, and if the support is received, which should be given, undoubtedly the Poultry Industry of America will receive an impetus of great moment.

SOFT FEEDING.

Opinions differ greatly as regards what is the best food for poultry. Some people swear by soft foods of various kinds, whereas others patronize a grain diet alone. All sorts of mealy doughs, however, are a wholesome food for poultry, and result in producing more eggs than feeding a whole grain diet pure and simple. The ideal diet for poultry should be neither too much soft nor too much hard, but just the happy medium. Several people feed soft foods alone in every possible form—with and without pepper, with and without pot liquor, with and without grease. Experiments made with such feeding suddenly and gradually in all weathers proved unfavorable in every instance. Several good birds died of diarrhœa induced by such feed, whilst the others suffered greatly from sicknesses of various kinds. A prominent continental breeder's opinion on soft feeding is this: —"My experience in soft feeding is just the same, and I am convinced that fowls cannot do without hard food. Where much soft food is given unhealthiness generally reigns. Of course a soft meal now and then is of great advantage." A change of diet is also essential to good condition—charcoal, burnt bones, sand, a little salt, while onions cabbage, potatoes, beans, etc., are all good for health, and, hence, lead to egg production. All kinds of poultry are also very fond of milk, and it appears to make no difference to them if it is sour, thick, or clobbered. The waste from cheese-rooms or buttermilk from the churn is excellent food, especially if mixed with an occasional meal feed. To make hens lay well feed as follows: Put two or more quarts of water into a kettle and one large seed pepper, and boil; now stir in coarse Indian meal till thick; cook this one hour, and feed hot. Horse-radish may be chopped fine and stirred in, with the result that you will get eggs daily, instead of none, perhaps, before feeding. Many people complain that their hens won't lay; to such we recommend cooked feeds, fed hot, especially good egg-bringers being boiled apple skins seasoned with red pepper, or boiled potatoes spiced with horse-radish. Corn or wheat fed alone tend to lay on fat and keep egg baskets empty. A spoonful of sulphur stirred in with cooked foods is a good thing for hens; it frees them from vermin and gives tone to the system. Some people object to the giving of sulphur. These I would remind that sulphur is largely present in the feathers and the eggs of fowls, and where birds are kept in confined spaces, it only seems reasonable that a certain amount of sulphur should be given them occasionally. Of course it is not required if cabbage-leaves, or some other sulphur-containing food, is given. Lime should also be given as a solution in water.—*Feathered World, England.*

WEIGHTS AND PRICES.

The market for some kinds of poultry is such that while a large supply may be on hand and sales slow, yet high prices are obtained for other grades. For the information of those who have not closely observed the markets during past years, so as to make a comparison, it may be mentioned that very early in the spring, about February or March, consumers prefer a chick that does not exceed one pound in weight, and as the season begins to open, the weights increase. The highest prices (the month of May) are when broilers weigh a pound and a half each.

Following the progress of weights and prices, there is a gradual decrease of prices, but the weights are increased at the same time in a manner to keep the chicks at a somewhat uniform sum, so far as the total amount received is concerned. That is, if a chick weighing a pound and a half sells at forty cents per pound—a total of sixty cents—the chick weighing two pounds will sell for thirty cents per pound, which is also a total of sixty cents. It is not to be inferred that this is exact, but it is about the relative proportion, and will serve as a guide in making estimates of weights and prices for chicks.

There is a limit to weights. The buyers accept three-pound chicks at twenty cents per pound, but as soon as large chicks appear matured and reach a stage of growth when it is difficult to classify them, the prices paid are the same as for adults. For instance, a cockerel that has developed too much comb and wattles will sell as an "old rooster," and instead of twenty cents per pound being obtained, he will bring about six cents per pound. Of course the one price gives a profit, while the other causes a loss, and this may happen by keeping a chick but two or three weeks longer than it should be retained after it is well grown. Just when to sell so as to secure the largest profit is important to know, and it is well to watch the young stock. The best way to manage is to sell all young fowls so as not to have any of them exceed three pounds each.—*Mirror.*

TOO MUCH WEIGHT.

It is probably a mistake to attempt to have laying hens so improved as to gain weight with each improvement. Weight and egg production should be separated, just as in the case with the beef breeds and milk producers of cattle. The greater the size and weight, the more sluggish and less active the bird, and the greater the cost of keep, while the number of eggs will not be increased. The Brahmas, Cochins and Plymouth Rocks can be made to attain very heavy weights, when fed for that object, but they would really be more serviceable if of medium size. On the market stalls the medium-sized carcass is always preferred, and it is safe to assert, that as the weights increase the production of eggs decreases, though individual large hens often prove to be excellent layers. Some birds are really heavier than they appear, which indicates that they have been improved in the direction of table poultry rather than in producing eggs. The Indian Games are an example of this class, and the Plymouth Rock is gradually becoming of the same condition.

It is not extraordinary for males of the Plymouth Rock breed to weigh twelve pounds, while Brahmas have reached fourteen pounds or more, the cost of maintenance of such large breeds destroying all advantages gained by the weight. There is always some sacrifice in obtaining weight. We lose early maturity, the prepensity to forage, and entail disease by overfeeding. We have never yet seen very large birds tha were profitable. It takes too much feed and time to produce them. When breeds are being improved the size should not be a first consideration. Hardiness and activity are more essential than size. The Leghorn is small, but it is unexcelled for producing eggs, and is also a fine market fowl, despite all that may be stated to the contrary. The tendency to produce great, mammoth birds is simply to obtain something more ornamental than useful. A Brahma male should really not exceed ten pounds weight, and a Plymouth Rock eight pounds, which is sufficient size for any breed if the hens are to prove active and prolific.

INCREASING EGG PRODUCTION.

Although but little food should be given in summer, yet the hens can be fed with advantage if the feeding of fat substances or starchy foods is avoided. It requires careful judgment in feeding such foods as corn, wheat or oats in summer, as they contain too much starch, and may cause the hens to become too fat. If it is deemed necessary to give food to the hens, let it be pulverized bones or lean meat. The difficulty with lean meat is that of procuring it. There is, however, on the market, and for sale in nearly all towns, the ground meat of the rendering establishments. It is first cooked, subjected to superheated steam, and pressed until all the fat is removed. It contains a proportion of the bone, and also of the solid portions of the meat, but it also loses some of its nitrogen during the process to which it is subjected.

When feeding ground meat, it will answer the purpose to fill an empty cigar box with it and place it where the hens can help themselves. This will be all the food that they will require if they are on a range, and they will not eat too much of it if grass and other foods are plentiful, while the result in eggs will be satisfactory. Another method of promoting egg production is to give the hens a liberal allowance of linseed-meal three times a week. A tablespoonful to each hen, mixed with bran, moistened, will prove valuable in regulating the bowels and in assisting the hens to provide egg material, but care must be used at all times not to make the hens fat. Correct feeding cannot be imparted to any one, as it is a matter of observation of the flock, each person regulating his method according to the circumstances.

TOBACCO FOR GAPES.

Colonel F. J. Curtis writes to the *Rural New Yorker* that he has cured all his chickens of the gapes by making them inhale tobacco smoke. He says: "The treatment has done them no harm, and the trouble of smoking is but little, if it is done when they are in the coop. It takes but a moment to put them in a basket, and five minutes is as long as they should be subjected to the inhalation of smoke, and not so long if it is strong enough to produce stupor. As soon as a chick is stupified, it should be taken from the basket and laid on the ground, when it will revive. Our chickens were nearly dead with the gapes when first treated, but got better with each treatment, and were cured after the seventh."

If it is necessary to repeat the above treatment seven times, we should think it quite troublesome. Our own plan is much easier, and so far, has proved very efficacious. Catch each little sufferer, and when he opens his little bill by way of protest, drop a lump of camphor as large as can be swallowed with ease. When the disease had been allowed to run we were obliged to repeat the dose.

FUMIGATING FOR LICE.

Sulphur destroys everything that contains life. No living creature can exist in the presence of the sulphurous acid gas if in a closed room. It is useless to fumigate, however, unless all the cracks in the poultry house are closed, and the fumes of the sulphur are confined. The gas is much heavier than the air, and though it rises when warm, finally sinks, and penetrates into every hole in the floor; hence, there is no escape for lice or rats. Vermin live during the winter by seeking the places that protect them; hence, when attempting to rid a house of lice the fact must be kept in view that something must be done to reach those parts not on the surface of the walls. To fumigate a house, melt some sulphur and draw a lamp-wick through the melted sulphur (first saturating the wick with coal-oil.) Then light the wick, and the sulphur will burn. The reason sulphur ceases to burn is that it melts and smothers the flame. A better plan is to sprinkle half a pound of sulphur on red hot sheet-iron (supported on bricks), with an oil lamp under the iron; but one must get outside quickly, or the result may be fatal. The large lice may be destroyed by greasing the heads and necks of the hens with melted lard.

THE PLYMOUTH ROCK.

The Plymouth Rocks were produced in 1849, by Mr. J. C. Bennett, of Plymouth, Mass. He gave this name to a very extra breed of fowls which he produced by crossing a cockerel of Baylie's importation of Cochin-Chinas with a hen, a cross between the fawn colored Dorking, the Great Malay and the wild India. Her weight was six pounds seven ounces. From the above we find that Plymouth Rocks are half Cochin-China., one-quarter fawn colored Dorking, one-eighth great Malay and one-eighth wild India, having five primitive bloods, Shanghai, Malay, Game, Turkish and India, traceable by referring to the history of those breeds and their crosses respectively. They were large cockerels measuring from thirty-two to thirty-five inches in height and weighing ten pounds and over; pullets from six and one-half to seven and one-half pounds. The pullets commenced laying when four months old, thus proving themselves very superior layers. Their eggs were of medium size, rich and reddish brown in color. Their plumage was rich and variegated; the cockerels usually red or speckled, and the pullets darkish brown. They were very fine fleshed and easily fit for the table. Their legs were very large and usually blue or green, but occasionally yellow or white, generally having five toes upon each foot, and some had feathers on their legs. They had large single combs, short tails and small wings. There was the same uniformity in size and general appearance, at the same age of the chickens, as in those of the pure bloods or primary races. They were sold in a limited way through New England and western New York.

We see from this what the Plymouth Rock was in the days gone by; in short they were mixed and resembled nothing in particular; some had blue, green, white or yellow legs, some feathered legs; still they were an excellent general purpose fowl, large, early layers, etc. We would not think much now of a man's Plymouth Rocks if he were to show us such specimens.

We are very proud when one comes to look over our yard of Plymouths, to show them large clearly barred hens and pullets weighing from seven and one-half to nine pounds apiece, mated to fine large male birds fully up to the standard in weight, plumage, perfectly clear blue and white, barred to the skin, yellow legs, not a yellow cast, and yellow bills. It is hard to get all these requirements, but it can be done if one takes pains with his stock. I cannot see what is the use of having standard weight for our different varieties and not keeping them up to that weight and over if possible. Some breeders are over-looking weight and go for barring altogether, because they can go to the shows and win the prizes on plumage alone, which I think is very unjust. A bird below the standard in weight bears a very serious defect, and if we all bred that way we would soon have nothing but bantams.

At a recent show of Barred Plymouth Rocks the pen that won first prize was headed by a cockerel, and not a young one either, but was as large as he ever would be; he would not weigh seven pounds, and was a bantam for a Plymouth Rock, but he won on plumage alone. Then we walked over to the open classes and you could pick out this same man's stock simply because they were positively bantams for Plymouths, but had the plumage.

Now if we have a standard we should work up to that weight, and a bird not coming up to that should be disqualified, then we would do away with these bantams. I feel quite sure that this will soon come to pass, and if it does not, this small stuff will be spreading over the country, constantly doing a great deal of harm as far as size goes. Even Mr. Bennett with his so-called Plymouths was very proud of their size, and we in this late day should not lose sight of this most important feature.—*Cor. Western Farmer.*

TO PREPARE FEATHERS FOR USE.

In every farmer's family, or wherever poultry is kept, it is of consequence to save the feathers of all the fowls for stuffing pillows, sofa cushions and the like, even if it is not deemed worth while to sell them. Of course, geese and duck feathers being much more valuable than any others, will always be preserved with care; but downy feathers of hens and turkeys serve a very good purpose, and unless you wish to make dusters of the tail and wing feathers, the soft, feathery portions of these may be stripped off the quill and added to the rest. Unless your flock is large it will take some time to secure enough feathers to stuff even a cushion; and as they are gathered from time to time, they must be put into whole cotton bags, tied closely so that no moth-millers can enter, and placed for a short time in a warm oven, to dry thoroughly. If you sometimes, for family use, and for speed and convenience, *scald* your hens before picking, the feathers can be dried in a tin pan, in a moderately warm stove oven, and added to the rest. Be sure that no bits of skin or flesh adhere to the feathers, as it gives an unpleasant odor, which is with difficulty removed. Feathers thus saved and prepared answer very well for under pillows and bolsters, and are quite nice enough for chair and sofa-cushions.

An ingenious person can manufacture, for home use, feather dusters fully equal to those that are hawked about the streets, in shape or size resembling nothing so much as the huge bridal favors, or nosegays, which English people burden themselves with, and which our own people are aping largely. For dusters, look among the cast-offs in the attic for old parasol handles that are carved, polished, inlaid and what not. Remove them from the useless skeletons, drive a short nail through the brush end and tie to it a strong linen twine, with one end eight inches and the other about two yards long; arrange a row of turkey tail and soft wing feathers around the stick and wind them close with the long string; so proceed, finishing with the short downy feathers. Then have ready some melted resin, with which to cover the string (which should be tied to the short end securely), and over the quill part of all the feathers. A sheath of colored kid or broadcloth should be fastened over the end of the feathers, and you have thus an ornamental and useful article at little or no cost.—*Poultry World.*

PROLIFICACY OF FOWLS.

We wish to call attention to one point in raising poultry that is perhaps not thoroughly understood by some readers, and that is the fact that in aiming to secure a "general purpose" breed you really get nothing at all.

To present the matter plainly, let us take the Leghorn, a breed that is considered one of the best for laying. It is an egg-producer in the truest sense, and yet it has its faults. It can fly over the highest fence and does not grow very large. Now, let us look at the Brahma, which is just the opposite of the Leghorn, except that the Brahma hens are good layers if properly managed. The Brahma cannot fly at all, and it grows to a very large size, being considered an excellent breed for market.

Some enterprising farmer will endeavor to combine the qualities of the Leghorn and Brahma by crossing them. What is the result? Simply mongrels, for the offspring will be able to fly, and they will not be equal to either parent in any respect. The uniformity of the flocks will have been destroyed and the the tendency will be on the down grade instead of improvement. The object in crossing is supposed to give greater hardiness, as the "new blood" will be an advantage. It is just as easy to procure "new blood" by breeding pure breeds as by crossing. If the breeders of Jersey cattle should attempt to secure size and hardiness, with larger yields of milk, by crossing with the Holsteins, the result would be that the Jerseys would soon be extinct, and yet this is just what results with poultry when two breeds are used for crossing.

To secure greater prolificacy keep the birds pure, and select the eggs for hatching from the most prolific hens. If possible, aim to use a male that is the son of a prolific hen. In this manner, by careful selection, the number of eggs will be increased each year, and if the "new blood" is necessary, aim to get it from a flock of prolific fowls. Never attempt to increase the production of eggs by any method of crossing. It has been tried hundreds of times, and always ended in the destruction of the flocks.

SUMMER FOOD.

If the hens must be fed on anything at all it should be on lean meat. It is better to feed nothing, and let the hens pick up all they can from the range, which gives them a variety and keeps them in exercise, but when the hens do not lay, a mess of cooked lean meat, once a day, will often start them to laying when everything else fails. Hens will not lay after they begin to moult, but as long as they are not moulting they should be laying, as there is no season of the year so favorable to egg production as the summer.

When the hens are not laying during summer, there is something wrong, It may be that they are too fat, or that lice are annoying them. It may happen that even on the range there is not a sufficiency, but it is seldom that such is the case. The majority of those who feed their hens give nothing but grain, and in so doing they soon get the hens out of the favorable condition for laying by making them too fat.

The best summer foods are meat, milk and grass. The hens can secure all the green food they wish if they are at large, and also seeds and insects, and if supplied with skim-milk they will need no other food as long as they are laying; but should the supply of eggs fall off, give lean meat. Cut off every portion of the fat from the meat, and use only that which is lean. A pound of meat will be sufficient for sixteen hens, or an ounce for each hen. When the hens cease laying it would be well to first examine for lice, as that is where most of the difficulties begin, for when the hens are kept clear of lice they will usually give good results of themselves.

HOLD ON TO THE GOOD.

If you find among your hens one that is an extra good layer and possesses many other qualities desired, keep her, no matter what breeding she may be. The chances are, however, that such a hen is well bred and from a cross of good stock, though you may not know of which particular breeds she may have been produced. Keep her for breeding purposes especially. Save every egg from her, and let the other hens hatch them. A hen will produce fifty choice pullets in the spring and early summer, and more later on, provided her eggs are used for incubation only. In this way the prolificacy of a flock may be increased, and especially if the choicest pullets are retained in the same manner; but the test of the pullets should not be from their appearance only, but they should be judged by the work they perform in filling the egg basket.

QUICK PROFITS.

To secure the greatest profit, the aim should be to shorten the time of growth as much as possible, as the quicker a fowl reaches the marketable age the less the labor and smaller the cost. It is well known that a duck will consume twice as much food as a chicken and is, apparently, more expensive to keep, but when it is considered that a duck also grows twice as fast as a chicken, the cost to produce a pound of meat on a duck is no greater than for other poultry. Profits are not made by feeding fowls after they should no longer be retained. When fattening fowls, they should be weighed every two or three days, and as soon as they show no increase in weight they should be marketed. There are business methods in poultry raising as in all other pursuits, and the largest profits are made when business methods are practiced. It should be the rule to keep nothing that does not pay, and when a chick is hatched it should be pushed right on, so as to get it into market in the shortest possible time.

For Sale.—Trio Black Minorcas, one B. P. Rock cock. Fine birds. Write, Ed. Hart, Owego, N. Y.

For Sale.—S. C. W. L., half price if taken this month; prize winners. Jesse Lovell, Lewistown, Ill.

Jumbo I. Games. Frayne, Champion and Agitator strains. Cir. P. O. Hopkins, Hammansburg, O.

100 S. C. B. and W. yearling Leghorn hens for sale. T. F. ALDERFER, Harleysville, Pa.

$30 buys 2 Im. Excelsior Incubators. 200 and 500 egg. A. J. BRIDGES O'Fallon, Ill.

BELGIAN HARES for sale. Full par. given. Address A. H. Whitmore, Hammonton, N. J.

For Sale.—Poultry Plant, twenty miles from Chicago. In full operation. 1,000 chicks. Address F. HOUSHOLDER, Western Springs, Ill.

White Fowls. Stock for sale, cheap. W. Polish, W. Cochins, W. Leghorns, bred from prize winners Cir. free. Geo. A. Friedrichs, Erie, Pa.

Northup's Black Minorca. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

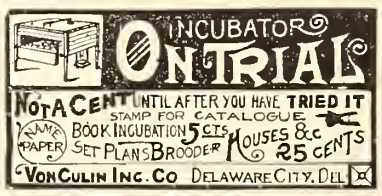
LIGHT BRAHMAS.
Heavy winners at Bloomington, Ill., Dec. 1892, and Indianapolis, Ind., Jan 1893. Stock for sale.
ALFRED DOYLE, Morgan Park, Ill.

HOWELL'S LEGHORNS.
400 White and Brown Youngsters ready for fall and winter shows and next year's breeding.
C. E. HOWELL, Elmira, N. Y.

FEED MURDOCK'S CHAMPION EGG FOOD to your chickens. It cures Cholera and prevents common diseases. Every can guaranteed or money paid for food refunded. This food has not failed in a single Cholera yard since it was put on the market. 1 pound can, 30c.; 2 pound can, 50c.; 10 pound lots, $2.00. Address, mentioning this paper,
J. W. MURDOCK, Calumet, Iowa.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. CHARLES RIVER POULTRY YARDS, Newton Lower Falls, Mass.

Spratts Patent
Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N. Y



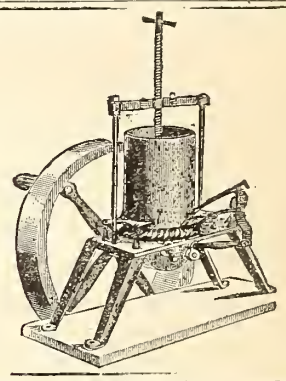
HAWKINS
breeds America's best PLYMOUTH ROCKS. Barred and White. WYANDOTTES. Silver and White. More prizes awarded this strain than all others combined. Selected Breeding Birds that will produce winners. Finely illustrated catalogue of America's greatest poultry farm, free. Lock Box 4. A. C. HAWKINS, Lancaster, Mass.

A PRACTICAL EVERYDAY COOK BOOK FREE containing over 2,500 tested recipes. 320 pages, bound in cloth. Don't fail to get the WATCH-CLOCK the greatest novelty of the age. For full particulars address The GREAT AMERICAN TEA CO., P. O. Box 287. New York City, N. Y.

HATCH CHICKENS BY STEAM
With the Improved Excelsior Incubator.

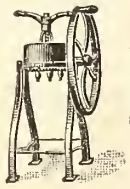
Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made. Circulars free. Send 6c. for Illus. Catalogue. GEO. H. STAHL, Quincy, Ill.

We are So Anxious
That you should see our new circular on
Poultry Supplies.
It illustrates the most complete line ever offered.
FREE
Johnson & Stokes,
—SEEDSMEN—
217 & 219 Market St., Phila., Pa.


Hundreds of these Bone Cutters sold and sales increasing.
WHY—They are sold at a reasonable price. It cuts all Green Bones fine enough for small chicks. It cuts clear meat, vegetables to perfection. It has an automatic feed. It takes in a large bone 4x6 inches. It is warranted for one year by hand or power. If you can break any part by actual use we furnish such parts free, during this time. It goes at a low rate of freight as cutters are all crated. Knives and cutter-head all one solid piece of chilled steel. Do not buy a Bone Cutter until you get our price. Valuable testimonials, etc. We will furnish you a superior cutter at a price you can afford to pay.
Our cutter was entered at Rochester, N. Y., for exhibition and was very highly commended. It was not entered in time for a premium and therefore did not compete for a premium. Get our circular, which shows you good men's opinion on this cutter, by actual use.
WEBSTER & HANNUM, Cazenovia, N. Y.

"Everything For The Poultry Yard."
Poultry and Supplies
MOST COMPLETE STOCK IN AMERICA.
PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.
Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.
Do You Want Our Catalogue?
60 pages, finely illustrated, full of Information; it tells all; send for it to-day and MENTION THIS PAPER.
MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.

BONE AND SHELL FOR POULTRY.
Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The lime of oyster shells furnishes shell material. The *granulated* size is for *adult* fowls; the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address
FITCH FERTILIZER WORKS, BAY CITY, MICH


MANN'S CELEBRATED BONE CUTTERS.
Awarded 1st and 2d prizes at both Rochester (Fair) and Madison Square Garden (Poultry Show) over all other exhibitors. No other bone cutter ever yet received even a 2d prize in competition with it. Four Silver and Bronze Medals, eight Diplomas and ten First prizes received. Forty-eight editors of such papers as Farm Poultry, Poultry Keeper, etc., etc., endorse it. Its superiority is unquestioned. Stamp for Illustrated Catalogue, free if this paper is mentioned.
F. W. MANN CO.,
MILFORD, MASSACHUSETTS

EGGS. Langshans, Minorcas, and Anconas, $2.00 per 15; $5.00 per 45.
IND. GAMES, $1.00 per 15. $7.00 per 30.
BUFF LEGHORNS, $5.00 per 15. $9.00 per 30.
BIRDS, Single, $3.00 to 10.00; Pair, $5.00 to $15.00; Trio, $7.00 to $25.00.
Send 4 cents in stamps for Illustrated Catalogue.

M. E. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

EGGS from prize winning B. Turkeys. Jos. W. Fleming, Buckingham, Ill. Stock after Sept.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm H. Van Doren, Buckingham, Ill.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

WHITE FOWLS, Prize winners, 92 to 97. Eggs. W. Cochins, $2.50; W. C. W. Polish, $2; S. C. W. Legs., $1.50. Cir. free. Geo. A. Friedrichs, Erie, Pa.

Prize winning S. and W. Wyans., I. Game and P Ducks. Stock and eggs for sale, send for Cir. **M. H. LEIDY, Blooming Glen, Pa.**

PIT GAMES ONLY, ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

BEATTY'S PIANOS and **ORGANS** $33 up. Want agt. Cat'lg. **free.** Address DANIEL F. BEATTY, Washington, N. J.

ROSE COMB BROWN LEGHORNS a specialty, also B. P. Rocks. Eggs $1.50 per 15, $2.50 per 30. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

Low Prices.—Eggs in small or large quantities, also stock. S. C. W. Legs and W. Wyans., Knapp St., cross b'ds for br'ls. B. H. Noxon, Elm St, Ithaca, N. Y

Buff Legs., Bn P. Rks., L Gms., Bl Mins., P. Rks. Eggs $2. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. R. Leghorns in the West. Eggs $2 per 13.

LIGHT BRAHMAS, EXCLUSIVELY.
(Felch and Williams Strain.)
Eggs $2.00 for 13, $3.50 for 26. Stock for sale.
D. M POLING, Van Wert, Ohio.

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO. Island P.O. Goochland Co., Virginia.**

SPANISH 29 years. **J. BENNETT, Summan, Ind.** Circular and my photo free.

FISH-SCALE JEWELRY. Elegant, artistic and durable. For price list send to MRS. W. T CATHCART, WASHINGTON, D. C., 516 3d STREET, N. W. AGENTS WANTED.

The Cream of the Earth! R. C. B. Legs., B. P. R'ks, Sil. Wyans., Pk Bant. Nothing but high scoring birds in our breeding pens! Eggs and Stock in season. Cir. Clarence L. Smith, Loveland, Colo.

40 acre Fruit and Poultry Farm for sale. Six roomed house, barn, four incubators, hot water brooder, 2,000 capacity, and eight fowl houses. Price, $2,200. Address, Susan Reed, Hammonton, N. J.

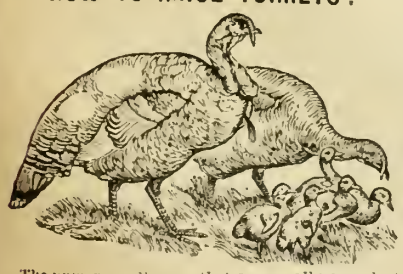
BUFF WYANDOTTES, PLYMOUTH ROCKS. EGGS $5.00 for 13, from prize winning birds, while getting, get the best
J. D. WILSON, Worcester, N. Y.

BUY THE BEST.
The Improved Moultor Incubator. Hundreds of Testimonials **from all parts of the world** as to its merits over all other makes. Large book with cuts for stamp. Address **A. F. Williams,** Bristol, Conn.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1 00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.00, postpaid. They make handsome and valuable books.
Address **Poultry Keeper Co.,** Parkesburg, Pa

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

HOW TO RAISE TURKEYS!



The numerous diseases that are usually prevalent among very Young Turkeys, may be prevented by the use of

CARY'S PILLS.

Send for Circular.
E. FOUGERA & CO.,
30 North William Street, New York.

C. C. CERTAIN CURE For Cholera, Roup, and other diseases of poultry 50c. per lb. 5 lbs for $2.

C. F. CHICK FEED Is invaluable for young and growing chicks. $3 @ 50 lbs. $5 @ 100 lbs.

S. S. SURE SHOT Is death to Chicken Lice and all insect life. 25c per lb. 5 lbs for $1.

Sent by freight or express on receipt of price. (*Sixteen cents extra per pound if sent by mail.*) We ask you to give these preparations a fair trial, and be convinced of their superior merit. Every poultryman should send two cent stamp for circular giving particulars.

F. A. MORTIMER,
Pottsville, Penna.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular.
H. D. MOULTON, Taunton, Mass

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock. Exhibition birds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pilldhimmon strains. P. H. Jacobs, Hammonton, N. J.

W. & B. MINORCAS. Fine exhibition birds and first-class breeding stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready.
R. A. FOX, Richmond, Va.

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free.
G. W. PRESSEY, Hammonton, N. J.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

LEARN TO CAPONIZE
INSTRUCTIONS MAILED FREE
WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Catal. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. R. Brabazon, Delavin, Wis

EVAPORATING FRUIT
STAHL'S EXCELSIOR EVAPORATOR.
Best, Cheapest & Most Reliable on the market. Catalogue free. Address Wm. Stahl Evaporator Co., Quincy, Ill.

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent), 100 per cent. more made in keeping Poultry. Also POWER MILLS and FARM FEED MILLS. Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa.

Indian Games, S. C. B Leghorns, B. Astrachans. Eggs in sea. Cir, W. A. Williams, Rome City, Ind.

MAPLE FARM DUCK YARDS.
The Largest Duck Farm in America

Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices
JAMES RANKIN, South Easton, Mass.

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN** and **WHITE LEGHORNS, BLACK, BUFF and PARTRIDGE COCHIN.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

CHOICE STOCK FOR SALE

after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH, Utica, N. Y.**

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always sale and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes,** Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.,** by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

ST. BERNARDS AT STUD.

Ch Scottish Leader fee $10; Eboracum, fee $40; King Regent, fee $35.

COCKER SPANIELS AT STUD.

Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free.

SWISS MOUNTAIN KENNELS,
Germantown, Philadelphia, Pa.

BOOM THE LEADERS!

The two best poultry papers on earth are
FARM POULTRY ..... **50 cts.**
and
POULTRY KEEPER ..... **50 cts.**
We will send **both,** for one year, for **only 70 cts.**
I. S. JOHNSON & CO.,
Boston, Mass.

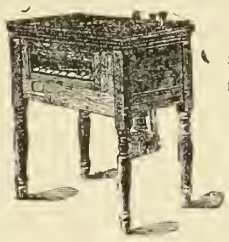
ST. BERNARDS.
(CHOICE STRAINS.)
PUPS FOR SALE.
Send stamp for circular giving full particulars.
MALES, $20.00 to $50.00.
FEMALES, $15.00 to $35.00.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,
ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.10 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.
PETER DURYEE & CO., 215 Greenwich St., N. Y.
SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Cups and Nails. Sample and circular free.
A. F. SWAN, 35 Dey St., N. Y.



The Prairie State Incubator

takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 24th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $25.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.
Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders 53 Diplomas Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
Homer City, - - - Penna

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.
It is acknowledged to be "**The Best Poultry Magazine Published**" in the world.
Send for **Index** to last Vol. **free,** and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin** with **any** back number you desire.
Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "**What has been done, can be done again.**" **Remember** the price; 50 cts. one year; six months 25 cts; sample **free. Remit** cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

$20 PHOSPHATE FOR WHEAT. Sold to farmers direct. No Agents. **York Chemical Works.** York, Pa.

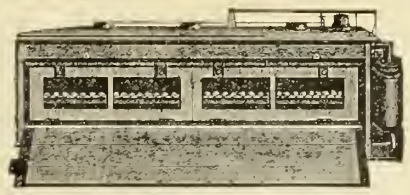
EGGS for setting from B. Plymouth Rocks, Brown Leghorns and Light Brahmas, M. B. Turkeys and Pekin Ducks, also breeder of Hamshiredown Sheep, English Beagles and Fox Hounds. A. Elwyn Strode, Box 1936, West Chester, Pa.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,**
1011 Arch St., Philadelphia, Pa.
145 Grand St., New York.
36 East Madison St., Chicago.
627 Smithfield St., Pittsburg, Pa.
228 N. Howard St., Baltimore, Md.
170 W. 9th St., Cincinnati, O.
Oldest Homeopathic Pharmacy. Established in 1835.
The Poultry Doctor, 85 pp., 12mo, cloth, 50 cents.

LIGHT BRAHMAS exclusively, large size, fine shape, well marked, extra hackles, leg and toe feathers, remarkable layers, almost non-sitters. Always win in strongest competition. At Bloomington, Illinois, Dec. 1892, 1st on cock, 94½; 1st and 2d on hens, 92½ and 91½; at Indianapolis, Indiana, Jan. 1893, 1st on cock, 92; 1st and 2d on cockerels, 95 and 94; 1st, 2d and 3rd on pullets, 95, 94½ and 94½. A prize on every bird shown. Stock for sales. Eggs in season. **ALFRED DOYLE, Morgan Park, Ill.**

LIKE WILL BEGET LIKE."

700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by "**Ajax,**" "**Leo,**" "**White Prince,**" "**Cody,**" "**Sir Henry**" and "**Alexas,**" the grandest specimens of these varieties owned in America to-day. At **New York,** Feb, '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.



Won at Madison Square Garden, 18 2. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.
THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.
Jas. Rankin, South Easton, Mass.

Sweepstakes at Chicago, 1891
B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free.
F. M. MUNGER, DeKalb, Ill.

ONLY $1.10! CANNOT BE EQUALED!

FARM POULTRY (Monthly) **50cts**
POULTRY KEEPER (Monthly) ..... **50** "
FARM and FIRESIDE (Semi-Monthly) **50** "
MODERN COOK BOOK ..... **50** "
Total **$2.00**
All sent postpaid on receipt by us of cash or stamps, **$1.10.** Sample papers free. Address
FARM POULTRY,
Box F. P. BOSTON, MASS.

Scribner's Lumber and Log Book.

OVER ONE MILLION SOLD.

Most complete book of its kind ever published. Gives measurement of all kinds of lumber, logs and plank, cubical contents of square and round timber, stave and heading bolt tables, wages, rent, board, capacity of cisterns, cord-wood tables, interest, etc. Ask your bookseller for it, or sent postpaid for 35 cents.
G. W. FISHER, Box 238, Rochester, N. Y.

KNAPP BROS.

ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD

WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.

Proof—The records at 29 of the **leading** shows during the past ten years—**Highest Honors every time.** We sell annually **hundreds** of **Exhibition** and **Breeding birds** but **never at any** price, our **best** tested **breeding** stock, $400 in **one** order at a recent sale, for 18 show birds. **OUR MATINGS** for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce **sure winners** and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. **100 fine breeding Cockerels,** separate or mated up in **pairs, trios or breeding pens** to suit customers, at reasonable prices for quality. **EGGS** for **HATCHING** from our **choicest matings,** at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address
KNAPP BROTHERS,
BOX 501, FABIUS, N. Y.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Wants Swan's Eggs.—Can you tell me where I would be likely to procure a setting of Swan's eggs, or a pair of the fowls, and about what they would be worth?—W. S. Jessup, Augusta, Ga.

Will some reader write him? We give address in full.

Light on Eggs.—Does light have any known effect on eggs while hatching? Our incubator faces a window, and the light (not sunshine) is constantly on the eggs in the incubator drawer.—J. F.

We have known of no instances in which light is said to be injurious.

Lice on Turkeys.—Why are my young turkeys dying? They start by being dumpish, and keep their eyes closed until they die. What can I give them? I have them in the barn on the floor, where it is dry. Also, what is the matter with a Buff Leghorn hen I have? Every time we go near her she commences to whirl around and make her head go from side to side. What will cure her?—D. C., St. Clair, Mich.

The large head lice are at work on the turkeys, and perhaps also on the hen, though she is no doubt overfat. Rub a few drops of sweet oil on the heads.

Severe Winters.—We have long and severe winters here, but are within good easy distance of New York city, about six hours by express, I believe. Is there any reason why I should not be successful with poultry? I mean on account of the severe winters? I may fail from lack of knowledge, but would the severity of the weather in winter prevent me from keeping poultry profitably?—J. W. O., Cortland, N. Y.

Your climate is fully as favorable as that of New England, where some of the largest poultry farms exist.

Chickens are Dying.—My chickens are dying with two diseases, one something like the gapes, only they snuffle or make a loose noise, and in the others the bowels are loose, discharge yellow. I tried turpentine and camphor on several that had the gapes, but still they died.—Mrs. J. K. E., Blackburn, Mo.

Anoint the heads of the chicks with a few drops of sweet oil and give a teaspoonful of linseed meal to every twelve chicks three times a week, in the soft food.

Thermostat and Thermometer.—Please inform me through your paper where I can get a thermostat and thermometer, such as are used in the Simplicity incubator,—B. F., Jeffersonville, Ind.

We cannot inform you. Address the Simplicity Incubator Co, Delaware City, Del.

Breeds and Crosses.—I have a lot of Brown Leghorn hens; would I get large broilers from them by mating a Black Minorca or a Black Langshan cock with them? 2. Would the Leghorn hens ever breed true again if I should later on put them with a Leghorn cock? 3. Which of the different breeds would make the best cross for eggs and large broilers?—C. W., East St. Louis, Ills.

You would secure fairly good broilers by such matings. 2. They would. 3. Pure breeds are better than crosses, if the best layers are selected every year for breeding purposes, but if you *will* cross, try the Leghorn and Minorca for eggs. You cannot get egg production and large broilers to perfection by any known method of crossing.

Egg Turners.—How many kinds of egg turners are there? I am aware of the roller turned with a crank, and of the method of pushing the tray or rack back and forth. I am also aware of the method so much in use in incubators of the present day, using extra trays and turning them upside down. As I find all these objectionable in many respects I am desirous of finding a better way if in use or known.—J. V. B., New York city.

We know of no others than those you mention, nor of any parties who sell them.

Making Poultry Profitable.—If I keep 100 fowls and let them range on four or five acres of sandy and gravelly land, and feed them the year round on a variety of feed, keep the vermin down, and keep sufficient house room for them to roost in, could I make such a flock pay a pretty good profit? 2. Will burning sulphur in a poultry house kill the lice, or can they be scalded out with hot water?—J. B, Dixie, Fayette county, W. Va.

Under such conditions they will pay. About $1.00 per year, per hen, is an average profit. 2. Either plan will destroy lice.

Feeding Chicks.—Will you please tell me how often to feed little chicks? My husband tells me I starve mine. I feed all they can eat, three or four times daily.—Mrs. S. J. V. B., The Dalles, Oregon.

You are correct in your method of feeding.

What is Alfalfa?—I read about alfalfa, what is it a tree, or grass, or an herb? S. S., York, Pa.

It is a variety of grass, sometimes known as lucerne, and thrives in Colorado, California, Utah, etc.

Lice on Turkeys.—I have a fine flock of Bronze turkeys which I am anxious to raise, but they are badly infested with lice, the largest I ever saw. Will the editor, or some one of the readers of the POULTRY KEEPER, give a remedy for exterminating the lice without injury to the fowls? I tried kerosene on some of them to-day, which proved fatal to the lice it touched, but I am afraid it will also prove fatal to the turkeys, too, as they seem seriously affected.—Mrs. A. E. S., Coyners Springs, Va.

Use lard or sweet oil, a drop or two on the heads and face. Do not use kerosene on the body. Dust the birds with insect powder.

Buff Pekin Bantams.—Will you please tell me if Buff Pekin Bantam chicks are in some cases nearly white (and nearer white the better) and have a black bar on their wings. I bought two settings of eggs from a breeder, and that is what he told me.—J. N. F., Yonkers, N. Y.

The breeder is correct, as they *do* vary some—no specimen is correct. The correct color, however, is buff.

Feet Frozen.—I have a thoroughbred Light Brahma cockerel which had all the claws on his feet frozen off; he is not quite well yet, walks stiff and awkward, and sits a good deal on the ground, but has a good appetite. Will he ever be suitable to breed from, and will it be worth the while to keep him for that purpose.—H. V. Hailey, Idaho.

We doubt if the bird is worth keeping under the circumstances. He will also be more easily frosted next winter.

Third Potency.—In June number on page thirty-five, in the homœopathy inquiries, you refer to Belladonna "3", and Mercurious Iod. "3", etc. What does the "3" mean?—C. E. B., Denver, Colo.

It means third potency, or highly diluted or attenuated.

Feeding Chickens.—1. Is it a good plan to feed little chicks more than three times a day? 2. Is green cut bone suitable to feed them? If so, how often should it be fed? 3. Is the Mann bone cutter a machine which you could recommend? I am getting interested in the poultry business, and expect to raise about 200 chicks this year.—H. M. G, Woonsocket, R. I.

1. Feed them every two hours. 2. Green bone may be given once a day. 3. It is.

SOMETHING ABOUT BUYING EGGS.

As many of the readers may desire to procure eggs of pure-bred fowls this spring a few words on that subject may not be unwelcome. In the first place, before buying, aim to secure a hardy breed, or one that is adapted to your section. The best laying breeds may not be the hardiest; but in those sections where the winters are not very severe, nearly all the breeds are capable of giving good results under careful management.

For improving the common flocks, with a view of increasing egg production, the Leghorns are unexcelled, and for increasing the size of carcass and giving greater hardiness, the Brahma will answer admirably. The old and well-known Plymouth Rocks are considered a hardy breed, and are excellent, both as egg producers and for market. They do not excel in all the desirable qualities, nor does any other breed, but they stand high as an all-purpose fowl, if such a breed is possible. At all events, do not fail to improve your flock with some one of the pure breeds, no matter which of them you select.

Do not have eggs sent you too early in the season. Send in your order and cash early, but let the eggs come after the cold weather passes off, as it is a risk to hatch and raise a brood when the snow is on the ground, and do not crowd the eggs under one hen. A hen should have only ten eggs to cover during early spring, and before the chicks come off have a place for them. Should failure result in hatching the eggs, do not condemn the breeder. He cannot anticipate what is to happen in the future when he sends you the eggs, and the handling of eggs by expressmen, exposure to cold on the journey and other drawbacks may be met with.

Aim to buy from a breeder as near you as possible, so as to save expressage and other expenses, and always be willing to pay a little extra for the best, as it will be to your advantage in the end. If you raise only one good male from the eggs, it will pay you, for the improvement effected in a flock by a single male is much greater than may be supposed, as he can become the sire of more than a thousand chicks in a year, if all the eggs were used for incubating purposes.

HENS OR PULLETS.

The eggs from hens will hatch better than those from pullets, and chicks from hens will be stronger and more vigorous. Old hens will also lay as well as pullets, if properly managed, and they will usually begin to lay directly after moulting. Food and care will show its effect, no matter what the breed may be, but more dependence can be placed on some hens than on others, owing to the individual characteristics of each Large, rosy combs are sure indications of thrift, and when such is the case the hens will soon lay.

Hens have been known to lay well until six or seven years of age, and just when to declare them too old for service is difficult, as some hens will last much longer than others. Probably the first year after the pullet becomes a hen she will lay the largest number of eggs, but the eggs will be smaller from a pullet than those from a hen. It is difficult to feed highly for eggs without making some of the hens fat, as they will fatten sooner than will pullets, owing to the latter appropriating a portion of the food to growth.

There is a great difference in the breeds, and in many respects. The pullets of the Leghorn breed will begin laying when they are but five months old, but pullets of the larger breeds sometimes grow until nearly ten months or a year old before they begin to lay. The number of eggs laid is entirely a matter concerning each individual, no two hens being alike. Fowls not only excel in certain characteristics according to the breeds, but they are good or bad only when viewed from the standpoint of their requirements, and in proportion to their treatment, in order to accomplish the purposes for which they are kept. Some excel as egg producers and some for market, and they must be managed accordingly. If eggs are required, without regard to market quality, only the breeds that are active and vigorous should be kept. Poultry for market should be a secondary consideration on an "egg" farm.

EXPERIMENTING.

Experiments with poultry are best made with small flocks. It is an impossibility to fully observe a large number of fowls so as to be familiar with all the details of management. Each hen is a subject herself, and will afford ample work to one who desires to learn more. The most successful persons are those who begin with a few fowls, study their characteristics, and gradually increase the number. The best safeguard against diseases is to experiment in the cure of them with a few fowls; to learn how to avoid loss and to prevent diseases one should first manage a small flock. Experiments with a few fowls teach how to manage large numbers.

COOKED MEAT AND BROTH.

Meat from the butcher is the best food that can be fed to the laying hens, as it is egg producing and does not make them fat, if the meat is lean. Ground meat may be mixed with the morning meal. To feed meat, cook it to a broth and thicken with ground oats, or chop the meat fine. A pound of meat to sixteen hens, three times a week, is about the proper quantity, which, however, depends on the kind of hen. If she is laying well, she may be given meat every day with advantage.

LET YOUR HENS SIT.

The best results are obtained from hens that are allowed to sit than when they are prevented from incubating. When the hen goes on her nest to sit she does so for the purpose of using the fat of her body to impart heat to the eggs, and as she seldom leaves the nest to feed, she becomes reduced in flesh by the time the eggs are hatched. She also secures rest and recuperates. As a rule, a sitting hen is nearly always fat, and to prevent her from sitting, simply keeps her in a condition unfavorable to laying. There are times, however, when no chicks are desired. In such cases, let the hen go on the nest, giving her a few porcelain eggs. Do not break her from sitting, as she will soon become broody again, and will lay but few eggs before going on the nest the second time, but if kept on the nest for two or three weeks, and then "broken up," she will come off in excellent condition for laying, and will lay more eggs than she would have done if prevented from sitting, including the time lost in incubation, and she will not become broody until she is in a fat condition again.

CATER TO THE PUBLIC.

When poultry is raised for market, the poultryman can learn much in a short time by inspecting the market stalls. The object should be to learn just what the buyers demand, and then aim to supply them. It will be found that all markets are not alike, and that a close observation on the different markets, and also on the demands of the consumers, as well as the seasons when certain kinds of poultry are preferred, will give the farmer or poultryman an advantage which will enable him to secure not only better prices, but how to breed for the best results in selling poultry. It is the buyer who is to be satisfied, as he fixes the price according to the quality and his desires. If yellow legs on poultry are preferred in certain markets, and the buyers are willing to pay something extra for such, it is to the interest of the farmer to raise fowls with yellow legs. The best breed for his purpose is that which he finds will give the buyers the greatest satisfaction, and in so regulating his breeding he is not liable to err.

FATTEN THE FOWLS.

Never send a fowl to market unless it is in as fat a condition as possible. If a fowl will take on an extra pound of flesh, it will pay to feed it well until it reaches that stage. The reason is that there is not only a gain in weight, but in price. If a six-pound fowl, not in a choice condition, will bring ten cents per pound in the market, the extra pound may cause the fowl to sell for twelve cents per pound, being a gain of thirty-four cents for the whole, due to both increase of weight and better quality, while the food required for producing the extra pound may not cost six cents. Quality is a prime factor in market poultry.

HOW TO CROSS.

While retaining your best hens, do not overlook the fact that the male is the most influential member of the flock in determining the value of the future stock. If you wish to increase the number of eggs from the pullets you desire to hatch out next season, the male should be a Leghorn, and this is the time when he should be procured, as breeders have a surplus. If eggs are secondary to market quality, cross with a large, vigorous Pit Game male, and select large hens with which to mate him. When crossing for increased egg production, market quality should not be considered.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Scribner's Lumber and Log Book, Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers Price sixty cents, postpaid.

Vol. X. PARKESBURG, PA., SEPTEMBER, 1893. No 6

CONTENTS.

Poultry House for a City Lot, (Illustrated)—Houdans and Crevecœurs—Value of Poultry Products. 81
Anatomy of the Fowl—Onions Will Kill Lice—A Division of Poultry—Mistakes With Poultry. 82
A Rat-Proof Roost, (Illustrated)—That Sleepy Disease—Swellings and Tumors—Feeding Mixed Lots—Doctors Disagree—The Broiler Market—A Buckwheat Patch—Breeding Blue Andalusions—Col. Bover and Gen. Davis—Ducks—Midnight Marauders—The Hen Ahead: Perhaps—Can He Sell them?—Geese on the Farm—The Large Breeds of Ducks. 83
Moisture in Incubators—He has the Mumps and Experience—Has Faith in the Minorcas—How to Make Nests—Experiments in Crossing—Keeping Free from Lice—The Bronze Turkey—A Practical Experience. 84
Why Chicks Die in the Shell—Worms in the Intestines—Adding Eggs at Different Times—Why Chicks Die in the Shells—Hatching Experiences—O I Fly to Our Relief I—Feeding Fowls and Chicks—Grease on Chicks. 85
Brief Remarks from Readers: Too Much Stock—Gets 85 Per Cent—Mended the Eggs—Information for the South—No Trouble With Lice—Found Lice at Last—Combs Will Freeze—Thinks We are off on Corn—"Fills the Bill" Poultry Farming—Canker Cure—The Weight of Eggs—Picking Geese—Low Prices—Beans and Peas for Poultry—Should Pure Breeds be Crossed?—Kerosene Emulsion—Selecting Geese—How Mr. Pierce Keeps Green Food—The Proper Character of Bone Meal. 86
The American Plymouth Rock Club, (Illustrated) Gapes and Cold Storage—Worms in the Intestines—The Tags on a Duck—Indian Game Chicks. 87
Editorial Items—A Staggerer—Jersey Cattle and Tests. 88
Poultry for Profit—Management of Young Chicks—Bound Volumes—The Poultry Keeper Special—Better Get Out—Indian Games: A Puzzle—Something New on Moisture—New Breeds & Utility—Experience and Poultry—Fresh Air Mistakes—The Cost of Animal Food—Special Breeds. 89
Early Chicks for Market—Harboring Rats—Pure-Bred Stock and Farmers—Cheap Lands for Poultry—Meat a Necessity—Foraging and Eggs—The Gaps—How to Cure—Hardiness—A Point on When to Sell—Cholera Remedies—Wheat Cheap. 90
Comfort Poultry-House—(Illustrated)—Duck Breeding—Too Much Rooster—Bran And Oats in Summer—A Chicks Development—Something About Eggs—Windows of a Poultry House—Overfeeding Laying Hens. 91
Summer Water-Trough, (Illustrated)—Rearing Young Ducks—Leghorns as Egg-Producers—Incubator Hatches—The Cost of a Chick—Are Incubators Better Than Hens—Summer Pays Better than Winter—The Best Breeds—Value of the Range—Chicken Manure on Fruits. 92
Lice—Fowls for the Table—Eggs and Breed—A Low-Priced-House—When to Make the Profit—Incubators and Brooders—Soft Food—Hard Crop—Farmers and Poultry Shows. 93
Autumn Management of Poultry—Broke up a Sitting Hen—Begin in the Fall—Fattening Young Fowls—Broody Hens—Raising Geese Special Breeds—Advertisements. 94
Advertisements. 95
Bureau of Information—Mr. Kinney's Improved Method—A Kick on Pigeons—Publishers' Department. 96

HENS OR PULLETS.

The practice of retaining the pullets and discarding the hens can only result in a degeneracy of the stock. This fact may not be apparent in one, or even two, seasons, but sooner or later the effects become plain. Some pullets begin to lay prematurely, their eggs showing the immaturity of the pullets, being small and imperfect. Pullets hatched in incubators and raised in brooders are forced so highly by the warmth and extra food given that they sometimes begin to lay before they are four months old. They will produce eggs that hatch, but the chicks usually lack vitality. In an experiment made by us with chicks hatched from eggs laid by pullets and from eggs laid by hens, there was as large a number of chicks from the eggs of the pullets as from the hens, but the loss from the eggs of the pullets was much larger than from the eggs of hens, an experiment which plainly demonstrated that in breeding for the best results it will not do to discard the old hens and use pullets.

POULTRY-HOUSE FOR A CITY LOT.

Mr. M. J. Mansfield, Warsaw, Indiana, sends a plan of a poultry-house which he thinks suitable for one living on a city lot, the cost of which should not exceed $25. The house is eight by fourteen feet, ten feet high at the front and six feet at the rear. The front should have a large, "store-front" window, about five by nine feet. The department for the fowls is eight by ten feet of floor space, covered with fine gravel or sand six to eight inches deep. The roosts are movable and are over a platform, which is fastened to the wall with hinges, so that it can be raised up during the daytime (out of the way) or for cleaning. The feed-room is four by eight feet, in which are double rows of nests, movable, over which is a lath partition. The frame of the building is covered with tarred paper, roof and all, held on with lath, and sided with six-inch drop siding. The lath gives a half-inch air chamber all over. From twenty to twenty-five hens can be kept in the house, with a yard thirty by fifty feet.

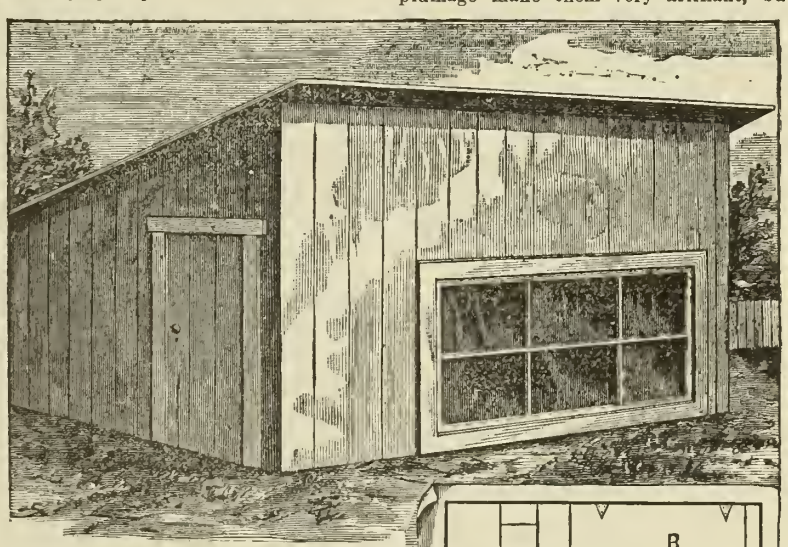


FIG. 1.—POULTRY HOUSE FOR A CITY LOT.

Fig. 2 shows the ground plan, A being the dust-box, B, the roosts over platform, and C, the nests. W, shows the water-can. This house affords ample room to the flock, is cheap, and also well arranged.

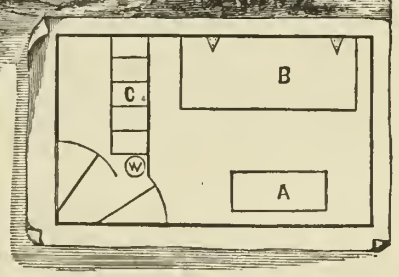


FIG. 2.

HOUDANS AND CREVECŒURS.

The Houdan is a handsome bird, and a flock of them, well bred and well cared for, is very showy in the yard or field. They are square and massive about the body, with short legs, a spirited or even fierce carriage on account of their peculiar crest, beard and muffing, and the lively markings of their plumage, which, when perfect, is of a mixed pebbly black and white.

They have the fifth toe, which they inherit from the Dorking strain in their ancestry, although along with it they have the fine flavored flesh and plump breast of that race. Their legs and their bones are remarkably light. They are egg producers rather than breeders, and, if properly fed, the hens will lay on without stopping to sit. They will thrive in confinement, when properly kept, as well as when running at large and when allowed to range, exercise the liberty now and then with greater freedom than is convenient on the farm.

The standard of excellence of the poultry fanciers for the Houdan is subject to some variation as to minor points, such as the shape of the comb. The fifth toe, however, is insisted upon; the feathering should be of black and white, evenly mixed, not pateby; the saddle of the cock is tipped with straw yellow; crest of black and white feathers and thrown back so as to show the comb, which is double, evenly toothed upon each side and with both sides alike in shape; the hackle is black and white, the beard and muffle almost hide the face and the wattles are long and evenly rounded at the ends.

The hen is square bodied, low framed, with plumage like that of the cock; the crest is full and round, and not loose and straggling or slaggy. The fifth claw is large and turned upwards. If good birds are procured to start with they should breed very true to the marks, but if long closely bred they will in time become mix in appearance.

The Crevecœur, like the Houdans, is named from the village in France, in the neighborhood of which it has long been largely bred for market. These birds are remarkably stately and handsome although sombre in color, except in the sunlight, when the golden green reflection from the plumage make them very brilliant, but this peculiarity is only brought out in a favorable light. They are much more rarely seen than the Houdan, though as producers of eggs and for non-sitting as well as for early maturity and whiteness and sweetness of flesh, they surpass these.

They are not winter layers, which is an objection, but when the cock is crossed upon Brahma hens, the eggs produce table birds of heavy weight, excellent quality, and in time for early marketing. They suffer nothing from confinement, and a dozen can easily be kept in a yard of twenty feet square and are very tame and friendly when petted.

They excel as table birds notwithstanding their black legs, which, however they may be objected to by the market men or the cooks, have no ill effect upon the color, flavor, or tenderness of the flesh, which is very white and of delicious flavor.

Young birds will fatten when three months old, and have been made to weigh four pounds at that age; and at six months, with two weeks fattening, have weighed seven pounds.

The Crevecœur cock should be a heavy, compact bird, mounted upon short, thick legs; the thighs being well feathered, tend to give the birds a heavier and more solid build. The back is broad and flat, giving a robustness to the figure, and slopes but slightly towards the tail, which is carried high. The general carriage is dignified, their sedateness being somewhat heightened by their sombre coloring. The comb is two-horned or antlered and the crest is formed of lancelet shaped feathers, which fall backwards and do not straggle in all directions as in the Houdan.

The chicks are hardy when properly cared for, but early chicks of this breed are rare on account of the late habits of the hen. The breast is full; the hackle is long and sweeps gracefully down the neck; the beard and muffle are full and low on the throat and the plumage, as previously described, when perfect, is of a solid black with greenish and sometimes brilliant reflections.

The hen is similar in color and special points to the cock; her body is massive and her legs short, to match her stout body. Her plumage is perfectly black, crest large and beard full and profuse, and comb, which is borned, is much hidden in the crest.

As these birds become aged, a few stray white feathers will appear in the crest, which, however, should be an objection in young birds.

When but one breed is kept, the Houdan would be preferable to the Crevecœur on account of its more lively color, but where cross-bred birds are not objected to, a few of the latter with their remarkably beautiful color, when in a bright light, their large size and handsome carriage, desirable table qualities and the habit of the hen to lay when all others are broody, would make a very desirable addition to a flock of Light Brahmas or White Cochins. Black fowls do not seem to become popular very readily, just as black breeds of cattle have few admirers, in spite of their many claims on the grazier and butcher; but if any black fowl is to be chosen, we would certainly give the preference to the Crevecœur.—*American Stockkeeper.*

VALUE OF POULTRY PRODUCTS.

In a recent report of the Board of Trade of Philadelphia, it was shown that the daily supply of that city was 510 calves, 1,410 sheep, 1,510 hogs, steers not given. Estimating the value of each calf, hog and sheep at $10 as the average, shows a value of $34,300. The eggs used daily amount to about 500,000, which, at only one cent each, amounts to $5,000. About 7,500 barrels of poultry are also used. During one year 15,000,000 dozens eggs were used, which, at twelve and one-half cents per dozen (a low estimate) amounts to nearly $2,000,000. If Philadelphia, which contains only one-sixtieth of the population of the United States, consumes eggs to the value of $2,000,000 yearly, it is safe to claim that the yearly product of eggs in this country has a value of somewhere about $1,000,000,000, while the value of poultry (geese, turkeys, ducks, fowls and broilers) amounts to a sum fully as large. The poultry industry of this country is great, and deserves more attention from experiment stations and fair managers than it has received, compared with other industries.

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

ANATOMY OF THE FOWL.

A Description of the Fowl—Functions of the Crop, the Liver, and the Process of Digestion.

From the French of V. La Perre de Roo we take the following, which we present to our readers with the view of giving them additional information in regard to the structure of fowls, the several parts of the body, process of digestion, etc. Although we have given it before, yet we repeat it in this issue. It says:

THE ANATOMY OF THE DOMESTIC FOWL.—THE HEAD.

The head of the fowl is composed of two parts—a cranium and a face; the cranium, relatively voluminous, is composed of several bones, the sutures of which in chicken are very visible, and disappear completely in adults.

The bones of the face comprise the two superior maxillæ, the vomer, the square bone, the incisive bone, and the inferior maxillæ. All these bones are small, but very elongated. The orbits are very large, whereas the bony wall which separates them is, on the contrary, very thin.

THE BEAK.

The beak is divided into a superior and inferior mandible; the jaw, or superior mandible, has, owing to a peculiar union with the cranium, a mobility which is not seen in mammalia. The two nostrils, placed in the middle of the superior mandible of the beak are narrow, and their projection of no account. The nasal cavaties are not deep and are equally separted by a septum. They open in the interior of the mouth by a simple slip, long, narrow and longitudinal, and furnished with small indentations. The slit opens when the bird's head is toward the ground or in its natural position, and it shuts when raised. It is on account of this anatomical disposition that fowls when they drink are obliged to raise their heads.

THE NECK.

The neck is composed of vertebræ of great flexibility. The trunk, on the contrary, is little movable; the dorsal parts, lumbar and sacral, of the spinal column, from an axis nearly inflexible, on which is articulated a basin entirely immovable, and a thoracic cage formed by ribs, of which the vertebral portion and the sternal portion are equally bony, and articulate themselves toward the middle part of the flank.

BREAST BONE.

The sternum or breast bone is a large body shield, capable of giving a large insertion to the motive power of the wing; that surface is, moreover, enlarged by a projecting blade, which has received the name of brechet, and is prominent on the whole of the medium line of the sternum. This brechet is more or less developed, according to the power of flight of the bird. Birds that have short wings have no brechet at all, whereas in birds of prey it is very developed, and also hooked. With certain species of birds it is even hollow and replaced by an air-bag. The anterior member is conformed in the wing, and for that purpose the shoulder is strengthened by a double caviculated apparatus, the merry-thought and sidesman, which rest on the sternum, or breast bone. The dimensions of the merry-thought vary in birds according to the degree of development of the wings, and it is missing in birds with short wings.

THE WINGS.

The *humerus* or bone of the arm, the *radius* and *ulna*, or forearm, offer nothing remarkable, but the end of the wing, or the hand, is formed like a stump, in which can be distinguished a thumb and a finger, more or less rudimental with two-joints. This mechanism, moved by powerful muscles, produces the basis of an instrument of locomotion really formed by the feathers. On their posterior border, the hand, forearm and arm bear the feathers of the wing, the force and dimensions of which are diminished as they get nearer the body.

THE LEGS.

The posterior, or abdominal member, is conformed for perching or walking. It is composed of a *femur*, or thigh bone; of a *tibia*, or leg bone; then, instead of the *tarsus* or *metatarsus*, comes a single bone, called bone of the *tarsus*, which represents these two parts, and gives internally attachments to the toes, These are four in number, three before and one behind, and some breeds have five. The knee is called the *patella* and the heel *calcaneum*, or *os calcis*—heel-bone. The bone of the *tarsus* or *canon* represents the foot of the hen, but she does not set it on the ground, walking on the toes, which are extended so as to give her a better basis of support.

THE CROP.

There exists in the hen three pockets, or stomachic dilations. The first pocket is very visible to the eye when full of food, and is called the *crop*. A little further on in the breast is the *œsophagus*, which contracts and expands so as to form a second pocket, with thick and glandular walls, and which is called *ventricule succenturie*.

THE GIZZARD.

Finally, next to the above is found a third cavity, very muscular and strong, known by the name of the gizzard. The crop is the receptacle of grain swallowed by the fowl. It is in this first pocket that digestion takes place. The *œsophagus* takes root from the back of the beak, runs along the neck, behind the trachea, and ends in the abdomen or belly, a little to the left. The work of the gizzard is to triturate the food which the hen cannot masticate. Small stones swallowed by the hen are found in the gizzard, which some naturalists say facilitate that operation. They state that the lining of the gizzard is formed of an extremely strong muscle, which contracts to nearly touching, so as to grind the grain between the stones. This the author doubts, very pertinently, saying that it is but an hypothesis which it would be impossible to prove.

THE FOOD.

Upon the process through which the food passes, the author wisely quotes from a distinguished French veterinary surgeon, M. Mariot-Didieux, as follows, supporting his opinion: "After a further strangulation and a short passage, the food is sent into the third pocket or gizzard. The last stomach is formed by a thick and very strong muscular membrane; the external fibres are of a sinewy nature, and of a nacreous (pearl) color; the internal membrane which lines the gizzard is very thin, fibrous and hard; it secretes a yellow coloring matter, which appears to have the property to dissolve stones, principally carbonate of lime. Silicate of potash (flint) requires a longer process. Liquids taken as drink appear to be absorbed by the first and second stomachs; they are never found in the gizzard unless in case of disease. It is worthy of remark that a hen eats, when in health, about three grammes (forty-eight pennyweight, Troy), of calcareous or silicious sand a day.

VALUE OF GRIT.

Most naturalists and writers on poultry have been unanimous in attributing this phenomenon to the necessity that all gallinaceous birds have to eat gravel and stones to facilitate their digestion; the stones, according to these writers, fulfil the office of masticating organs or triturators of food. Without absolutely denying this opinion, so generally admitted, we think the usefulness of the stones, considered as triturators, is but secondary, and that their principal use is to furnish, by their dissolution in the gastric bag of the third stomach or gizzard, the salts of lime of albumen and of silix. This opinion is the result of experiments we have made on this subject. In depriving for four months some fowls of all sorts of stones or sand, we remark that the shells of the eggs were much thinner, and that the albuminous white of the egg was much more liquor than in the egg of fowls which had their liberty. The yolk showed no difference. Are we not to conclude from this fact that the hen seeks for stones and sand, especially those of carbonate of lime, by natural instinct, so as to procure for her economy the salts indispensable to her existence, and for her eggs the elements necessary to the formation of the shell?

THE STOMACH.

The ventricule succenturie secretes the gastric juice and represents, according to that view, the real stomach. The intestine which completes the digestive canal of the hen joins on a cloaca, that is to say, a pocket into which also opens the ureters bringing the urine, and the canal which forms the passage of the eggs to be laid. The urine mixes with the excremental matter which proceeds from the intestine, and these are ejected altogether. The urine of birds is always concrete; it is composed of uric acid and sundry urates; in the droppings it forms the white matter that detaches itself from the dark portion, which is the real excremental part. The salivary glands are small in fowls, and produce a liquid thick and slimy, but the quantity is very small.

THE LIVER.

The liver is very large, and divided into two lobes of equal size. The gall bladder is large and contains a thick bile, very bitter, which gives the flesh a very disagreeable taste, if the fowl is not drawn soon after it is killed. As to the surroundings of the digestive apparatus, it is sufficient to say that the pancreas, or pancreatic gland, in gallinaceous birds is very much developed. This pancreas pours the pancreatic juice, like the liver, into the intestines by two small tubes in the centre of the duodenum, far from the pylorus, which facilitates the intestinal digestion.

THE SPLEEN.

The spleen is very small, of cylindrical shape, and placed behind the liver. Its functions seem to be to keep in reserve and prepare the blood used as one of the secretions necessary to digestion.

CIRCULATORY APPARATUS.

The circulatory apparatus offers no important difference from that of mammals. It exists, as in the case of the latter, by means of a heart with four cavities, and the distribution of arteries is the same. Their blood is, however, a little warmer, and contains elliptical globules of small dimensions. Respiration takes place by lungs, which are found in the posterior and superior part of the breast adhered to the ribs, and maintained below by a resisting membrau moved by muscular power to work the inhaling and breathing out process. The lungs are pierced with holes, so as to permit the air to circulate in all parts of the body, even in the cavities of the bones. The air is brought into these organs by a very long aerial tube, of which the windpipe and bronchia possess complete cartilaginous rings. But the most singular disposition of the respitory apparatus of the fowls is the existence of large cells of air in the breast and lower part of the abdomen, which goes to show that the hen requires and absorbs in her interior a quantity of air much larger in proportian than with mammalia.

GENERAL REMARKS.

With all birds the aerial reservoirs are nine in number, viz., the thoracic bag, placed in the interior part of the thorax; the two cervical reservoirs, situated at the base of the neck; the two anterior diaphragmatic reservoirs, placed between the two diaphragms; and the posterior diaphragmatic reservoirs, also placed between the two diaphragms, behind the preceding ones; and finally the two abdominal reservoirs placed against the superior walls of the abdomen. Of these nine reservoirs, the first is single or symmetrical, the others are double, and disposed equally on each side of the median plane. No doubt these numerous vesicles, filled with hot air at 104 degrees Fahrenheit, lighten the body of the hen when she flies, but the writer does not at all affirm that this is the only use, as the domestic fowl never flies to any height in the air.

The skin of the fowl is covered with feathers. Each feather is composed of a stem, the base of which is hollow, and inserted in the bulb; and of barbs which are furnished with down, hardly visible to the naked eye. The integumental appendages are well adapted to retain bodily heat. The feathers completely covering the skin of the hen, it cannot be said that she is sensitive to a delicate touch; and the tongue is the only organ subject to the exercises of any sense of feeling.

The nostrils are open at the base of the beak, but whether the sense of smelling is developed in the fowl or not, we know absolutely nothing.

If we were to judge by the rigidity of the tongue, by the scarcity and viscious consistency of the saliva, we should say that that the sense of taste was very little developed in the fowl. However, it rejects with astonishing sagacity the less desirable grains both before and after being taken into the beak.

The sight in poultry is incontestably very piercing. They spy at a great height the bird of prey which soars above, and give out immediately a cry of alarm, which is understood by ducks, pigeons, and all other denizens of the poultry yard. The globe of the eye is protected not only by two eyelids of vertical motion, as it is seen in some mammalia, but also by a third, called "blinking membrane," which has its existence from the internal angle of the eye, and which can be drawn from inside to outside over the eye. The cornea is strongly convex, the crystalline is flat, and the vireous body is small.

The ear of the hen is deprived of the concha, or larger cavity of the external ear. The labyrinth has only a rudimentary cochlea; the chain of ossicles is replaced in the middle ear by a single ossicle.

Finally, the external ear is a single tube, very short, but, notwithstanding these imperfections, the hearing of fowls is both acute and distinct.

It will be noticed that the writer admits that he knows nothing of the process of appropriating lime for shells of eggs other than when deprived of such that the shells were thinner, which we explain from the fact that grit simply permits of better digestion by better preparing the food. Hence sharp grit is an advantage by assisting to reduce the food for digestion before it reaches the proper place for that purpose.

ONIONS WILL KILL LICE.

Here is another remedy for Lice. A correspondent of the *Country Gentleman* relates his experience with lice on stock in which he says: "I used kerosene and lard mixed, curried and brushed over them also camphor dissolved in alcohol and carbolic acid in lard, but without satisfaction; and being determined that the lice should go I tried onions, after waiting about a week. One particular animal, a yearling bull, was very full, even after being treated with the other remedies. I took a large onion, cut it in two, and rubbed him hard all over till I had used three or more onions and my eyes smarted. Then I gave him some of the pieces that were left and a few other small scullions, which he ate with relish as did all the others, and then I awaited the results. The second day I examined him, and, to my astonishment and joy the hair was full of carcasses, but not a live, one could I find. Since then I have treated all the stock in same way, but fed none to the cows giving milk for fear of spoiling the butter. I am going to treat my poultry also by rubbing their roost It will save many an animal an uneasy night."

Now is the time to subscribe.

A DIVISION OF POULTRY.

The Secretary of Agriculture is now being beseiged with letters and petitions urging him to recommend to Congress a *Division of Poultry*. We approve of it, and by way of explanation give the resolutions of the Los Angeles County (California) Poultry Association, on the subject. Mr. C. T. Paul is President, and Mr. John C. Stedman Secretary. Here are the resolutions:

WHEREAS, it is estimated (approximatily) that the value of the egg product of the United States for 1892 reached fully $200,000,000, and the value of poultry about $100,000,000; and

WHEREAS, the National Government of the United States, through its Department of Agriculture, expends vast sums of money annually in fostering and encouraging nearly every branch of industry connected with an enlightened agriculture and horticulture, the lines of investigation and scientific and practical research being divided into special divisions, viz: the division of pathology, of etomology, of polomology, of forestry, of animal industry, etc., each under the charge of a competent chief and a corps of experts in their special lines; and,

WHEREAS, The poultry interests of the United States, equalling in magnitude any branch of rural industry and exceeding others in no way so represented; therefore be it

Resolved, by the Los Angeles County Poultry Association in regular convention assembled, that the Secretary of the National Department of Agriculture at Washington is earnestly petitioned by the poultry interests represented in this Association to establish a sub-division in connection with the bureau of animal industry, to be known as the division of poultry; said division to be in control of thoroughly scientific and practical poultry breeders, and to have for its objects the advancement of the poultry interests generally, to the end that the most economical and effective means for eradicating pests and disease may be ascertained, and the best results secured at the minimum of cost in the rearing, mating, breeding and managing of fowls.

Resolved, That the Secretary of the Los Angeles County Poultry Association send copies of these resolutions to the Secretary of Agriculture at Washington, to the California representatives, to the secretaries of kindred and sister poultry associations, and to the poultry papers generally.

The only objection is that if a "Division of Poultry" is established, some pothouse politician, with a "pull," would be placed at the head, and would use the A. P. A. to "pull the chestnuts," as was done at Charleston. It would make some of these who live on "chicken men" crazy, as is the case with the scramble for the superintendent of the World's Fair poultry department.

Another thing, most important of all, is the privilege of sending eggs for *hatching* purposes (not exceeding fifteen) by parcels post, so as to get rid of the extortionate express companies.

We approve of the resolutions above, but fear that poultry matters are too insignificant to be considered by the men who make a living by politics, and whose trade is to *promise* but never fulfill.

MISTAKES WITH POULTRY.

The man who puts fifteen eggs under a hen, instead of eleven or thirteen, so as to make sure of a good lot of chicks, wants more than he will get. We don't like to deal with that kind of a person, because he displays greediness in the first place and lack of good chicken sense in the second place. A hen will in nine cases out of ten hatch more chickens from thirteen eggs than from fifteen eggs simply from the fact that not more than one or two hens in a dozen ordinary farmyard hens are large enough to cover fifteen eggs.

Another mistake consists in consolidating broods by giving all the chickens to one hen when two or more hatch at the same time. Don't do it. It may seem all right, but it is all wrong. In warm, dry weather the large broods may do fairly well, but just let a rainy, chilly spell come along and then see how fast the smaller and weaker ones drop out of the race. Let each hen have her chickens. It would be much better, and the chickens would grow faster and larger if each brood consisted of seven or eight chickens. There is no disguising the fact that the secret of success in poultry keeping consists in keeping all flocks small.

The person who advocates putting 100 or 200 little chickens all in one bunch in a brooder knows nothing about the necessity of observing natural conditions in poultry raising. Nature intended a hen to sit on a small number of eggs and to care for a small number of chickens only, and nature never intended 100 hens to run, eat and roost together, nor 100 chickens to be penned up together.—*Southern Cultivator*.

A RAT-PROOF ROOST.

A roost pole, proof against rats that attack chicks on the roost, is sent us by Mr. Robert Osterhorn, St. Louis, Missouri. The stakes are 2x2 inches, and three feet long, driven into the ground about one foot deep. The metal plates, AA, are ten inches in diameter (any old wash-basin or large pie-plate, inverted, will answer), and they are placed centrally over the stakes; the pole, which is one inch thick and four inches wide, being nailed over them. The end pole (B), shown on one end, is used where the end of the pole comes near a wall that rats can climb. The end plate should be six inches wide, seven inches high and sixteen inches from the wall.

THAT SLEEPY DISEASE.

When a chick is sleepy look for lice. Mr. Geo. W. Ashford, Seattle, Wash., writes his experience with chicks, which we give below for the benefit of other readers who may be interested:

"My birds are game; it may not be necessary to give breed, but will be just as well. I give them soft feed in the morning, consisting of bran, shorts and corn meal, and alternate by making corn bread. They also get plenty of grass, run at large, and get plenty of bugs, worms, etc. At noon they get ground wheat (or rather cracked), and the same in the evening. The chicks are from six weeks old to eight weeks, and they run with the hens. They have plenty of gravel, also ground crockery. Now for the symptoms. They commence by drooping their wings and seem sleepy, won't eat, and dry up, seeming to starve to death. I have dissected them, and they appear perfectly healthy, with nothing in their intestines, the liver being perfectly sound, and in fact, I cannot find one thing wrong. They are not lousy, for I watch them closely. I give plenty fresh water twice per day, and keep it in the shade. I think I have told all I know that would assist you in determining what the trouble is. It may be some of your many readers have had the same trouble, and may be able to overcome the difficulty by your reply. I have lost about fifty chicks. Last year I did not lose one dozen out of 106 hatched. I hatched thirteen Brown Leghorns out of thirteen eggs, and have raised twelve; so they now crow, and were hatched March 29th, 1893. This has been the most unfortunate season to raise chicks I ever experienced, as it has rained so much and been so cold. The POULTRY KEEPER is early for July—arrived 26th of June—and I look for it eagerly every month, and, not to flatter you, it leads all journals on poultry I ever had the pleasure of reading."

There were no lice apparently, but there were, perhaps, the large lice on the skin of the heads and necks. Whenever a chick is sleepy it is a fair indication that the large lice are at work. It is warm weather and lice that make late chicks so difficult to raise, and the hard feathered birds, like Games, are more quickly attacked by lice than the chicks of some other breeds.

SWELLINGS AND TUMORS.

Mrs. E. M. Smith, East Woonsocket, R. I., gives a case which is similar to many that occur, but to which we desire to call attention, as it is a very important matter. She writes:

"I have a flock of about eighty hens, four of which have been afflicted with a swelling of the eye. The swelling would be the size of an ordinary walnut, completely closing the eye, and of a very red color. The fowl seemed perfectly well in other respects. The swelling remains for about two months, and then gradually disappears. Please tell me what you think the trouble is, and if it is contagious. Would you consider the fowls suitable for food?"

The fact that the swelling comes and disappears, and that several hens are affected, points to a *scrofulous* condition of the blood. The afflicted hens may be sisters, and the disease transmitted by one of the parents. No fowl that shows a disease of the *blood* is fit for human food. Nothing can be done in the matter, as it is impossible to give medicine every hour, or three times a day. It is cheaper and better to destroy birds if they have permanent, or apparently incurable, diseases. Roup is a scrofulous disease, and leads to consumption, as well as to other disorders.

FEEDING MIXED LOTS.

It is a mistake to feed the hens and growing chicks together, as the result will be that the hens receive too much and the chicks too little food. At this season one good meal a day is all that adult fowls should have, as too much grain causes them to become too fat. Chicks, on the contrary, until three or four months old, should have two meals daily. If all the fowls are fed together, the proper apportionment of the food cannot be observed. If the food is not given with judgment, the result is a waste and an increase of the cost.

DOCTORS DISAGREE.

There are differences in opinions, as all persons view from separate standpoints. How much moisture, the mode of hatching, and other questions, can be discussed, and information given by many, yet there may be no agreement. A reader at Avery, Ohio, writes as follows:

"I see doctors do not agree, but it seems to me that too much moisture is what causes the most of the trouble, for two reasons, I think. First, that it causes too much growth to the chick, so that it cannot turn to pip or break the shell around enough to get out (being so large). Second, it toughens the lining or skin of the egg, so that they smother. If nothing of this occurs, why is it that some advise water all the time while others use it from the fourteenth day? Also, why do the eggs need turning twice a day from the start by some, while others only turn them once, and others not at all the last two or three days? I think I will have to give you my experience with incubators sometime."

That the moisture depends on circumstances is true. If too much is given, the chick grows rapidly and becomes too large to stay in, yet is too young to come out and it dies. We have found that good hatches can be secured without any moisture at all, yet some prefer to use it. We do not believe it is necessary to turn eggs after the seventeenth day, nor do we believe it necessary to cool the eggs at all.

THE BROILER MARKET.

We frequently hear the remark that the market for broiler chickens is overstocked, and that the price obtained for the bird is not a paying one. We have, on several occasions recently, taken the opportunity of going through the wholesale market here, and inspected the chickens offered and seen them sold. From this personal inspection we have returned convinced that there is no truth in the complaint as a general one. We saw several coops of chickens sold a few days ago at twenty-two and one-half cents per pound, and few of the chickens in the coops weighed over one and one-half pounds each, and many were really unfit for sale. The rule of selling by weight is now firmly established in the Richmond markets, and those who send in good chickens thus get credit for all they weigh. It is a fair rule, both for buyer and seller, and ought to have been established long ago. At the price named, or anything near it, broiler breeding ought to pay and does pay. What is needed now is more care in shipping. Don't mix chickens weighing three-quarters of a pound each with those weighing one and a half pounds each. Let each coop be made up of chickens not varying more than a quarter of a pound in weight, and don't crowd into a coop fifty chickens when it will only comfortably hold twenty-five. These may seem small matters, but they are matters which determine whether the price for which the chickens will sell shall be a paying one or a losing one. A nice, clean coop of chickens, all about one size, and looking bright and healthy, with room to rest comfortably, will always sell for more per pound than a mixed coop of miserable looking, dirty chickens. The retailer can always find customers for clean, healthy looking chickens at good prices, whilst the poor, dirty ones have to be pushed off often at a loss on even the wholesale price. The same rule applies to marketing broilers as to marketing all other kinds of produce. There is always room at the top, always a demand for a good article nicely offered. Mixed lots are in the chicken market as in the fruit and grain markets, generally purchased at the price the worst are worth. Let there be no bad samples in the coop, and the whole will fetch the value of the best.—*Southern Planter.*

A BUCKWHEAT PATCH.

A farmer in New Jersey, who secures a trade of his own by sending only choice poultry to market, fattens his fowls in a manner to cause but little labor. He grows a crop of early peas for market and then plows the patch, sowing thickly, broadcast, with buckwheat. He gives no more work to the buckwheat, but as soon as the seeds are ready he turns all the hens intended for market on the buckwheat patch and gives them full privilege. He claims that the buckwheat destroys weeds and that he utilizes the straw for mulching. As the seeds of buckwheat are easily shaken from the heads when ripe, the hens have no difficulty securing their fill, and they also add quite a number of insects to the seeds in their crops. When the buckwheat is gone, he sends them to market, their superior condition giving him the highest price.

BREEDING BLUE ANDALUSIONS.

In regard to mating for color the following letter will show some of the difficulties often met with. The writer, who lives at Natchez, Miss., says:

"I have some Blue Andalusian chicks. Two of them are males; one is white with blue feathers, and the other one is a light blue. Will either of them do to mate with blue hens, to produce a good percentage of blues? If I mate the white one what would be the result on blue hens? As I have had no experience with the Blue Andalusians I ask for information."

A Blue Andalusian should not have white on any part of the plumage, as white is a disqualification. It is best to discard the birds that possess white. The Andalusian is really a Blue Minorca, and if bred for points should be kept close within standard requirements.

COL. BOYER AND GEN. DAVIS.

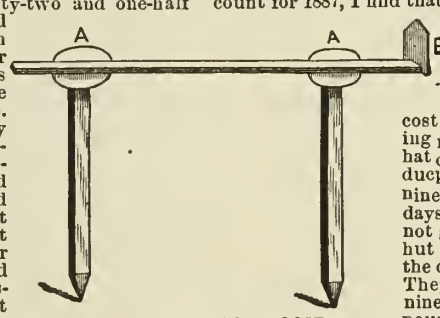
Gen. J. H. Davis, who is about to launch out *Poultry Talk*, makes the following remark in regard to Col. Boyer. He says:

"Col. Boyer is of the opinion that 'it pays to give the eggs under a setting hen a bath in tepid water on the 18th day,' as it supplies moisture. That might do in the kingdom of New Jersey where there is no moisture, but in the South, where the air is always sticky with moisture, the tepid bath is unnecessary."

The above is from the *Southern Fancier*. We had the same experience while living in Virginia, and believe it is a good thing to do anywhere. As they are all Generals and Colonels down in Virginia and Georgia, we suppose the title will fit us as well as others.—ASSOCIATE EDITOR.

DUCKS.

A writer in the *Poultry Journal* furnishes the following valuable information about ducks: "In looking over my duck account for 1887, I find that it cost even less to raise them than I stated in a previous letter. Four and a half cents per pound will cover the entire cost for feed, including milk. May 19th I hatched twenty-seven ducks from twenty-nine eggs. When eleven days old they would not go under the hen but would sit around the coop each by itself. They then weighed nine and one-half pounds. The next week they gained just nine and a half pounds, while the cost of feed was twenty-five cents. This made them eighteen days old.



A RAT-PROOF ROOST.

Next 7 days,	gained	15 lbs.,	costing	34 cents.
"	"	24½	"	51
"	"	23¼	"	60
"	"	20	"	73
"	"	18	"	90

The next ten days gained thirty-two pounds, at a cost of ninety-nine cents. In seven weeks and three days the twenty-seven gained one hundred and thirty-two pounds and a half, at a total cost for feed of $4.32, being three cents and three-tenths per pound. Add the weight when eleven days old—nine and one-half pounds—and we find the total weight to be one hundred and forty-two pounds, or an average of five and a quarter pounds each. The largest one weighed six pounds when eight weeks old. In December the largest pair weighed seventeen pounds. I kept this account in order that I might know just what it cost to grow a flock of Pekin ducks. Had they been intended for the market I should have killed them when nine weeks old, as shortly after the pin feathers started and they did not hold their fat. Killed at this time, they would have sold for at least fifty cents each while they had not cost over twenty to twenty-two cents each. My method of feeding was bread crumbs soaked in milk for the first few days, then added a little corn meal, shorts and cracked wheat. I very soon followed this with beef scraps in small quantity. Cracked wheat, cracked corn and oats formed the staple food as they grew older. All the soft food was wet with scalded milk or curd. I do not think there is anything so valuable for young ducks as milk. They were also fed short sweet grass, of which they were very fond. I fed them five times a day. I was particular to keep them from the water and rain until well feathered. I am satisfied there is no stock on the farm that will pay like a flock of ducks properly managed, if one is so situated as to be able to ship direct to the large markets.

MIDNIGHT MARAUDERS.

It is difficult to capture and convict that class which robs the industrious farmer of his poultry while he is asleep, as he usually has no time to follow up the matter, while his neighbors are disposed to take no action until their turn comes next, when the same course is pursued. Now, if the farmers in each neighborhood will combine, and subscribe about five dollars each, or raise fifty or a hundred dollars as a fund to be used in employing a detective whenever a robbery occurs, it will do much to prevent such thefts, as the thief, though not fearing discovery from an individual, will seldom take risk when there is an organized body to protect all. The sum subscribed need not be paid, but simply pledged, as it may never be used at all. If poultry thieves find that some one will be on their track, they will go elsewhere to operate. It is when the thief knows that each individual must protect himself, and leave his crops to look for him, that he feels safe and secure, and he then robs each and all in turn.

THE HEN AHEAD—PERHAPS.

A reader at Batavia, N. Y., who believes in the "natural" incubator, informs us that he has no use for incubators, and proceeds to inform us how the hen beat the incubator, as follows:

"I put fifteen eggs under a hen and she brought off twelve chicks. I filled an incubator with 450 eggs, and 372 chicks hatched. The hen lost only three eggs, and the incubator seventy-eight. I cannot afford such, as the hen hatched nearly all, and the incubator did not."

We pity the misfortune. The incubator hatched over twelve and one-half chicks for every fifteen eggs, while the hen hatched twelve. In other words the hen hatched eighty per cent., and the incubator eighty-two and two-third per cent. The above is on a par with many others. They complain over matters without actually noticing whether they have received a benefit or suffered a misfortune.

CAN HE SELL THEM.

If a man introduces a new breed, can he sell eggs? Is he obliged to get the breed into the Standard? The following letter from Luray, Va., is one calling for information. The writer says:

"I am trying to increase the prolificacy of my hens, and hope to have them average 200 eggs in a year. If they are not in the Standard, can I sell eggs from them?"

We will say that just as soon as our correspondent succeeds, and can convince others of the fact, all the Standard makes in the world cannot prevent him from selling eggs. More, the men who glory in the Standard will buy the eggs and secretly aim to get the breed in the Standard. The breed that lays the eggs will always sell. Standard makers cannot control *sales*, and that is where their power is broken. We would not worry about the Standard if we got the eggs.

GEESE ON THE FARM.

The Embden, a white goose (both male and female), is, with the Toulouse, the largest of all breeds. The best cross for the market is the Toulouse gander and Embden goose. The Toulouse is parti-colored, and the male and female are alike. In fact, the male and female of any pure breed are alike in color. The large breeds do not forage over as much ground as the common kinds, but produce twice as much feathers, in weight, and fatten more readily for market. An adult gander of the Embden or Toulouse breeds should not weigh less than twenty-five pounds and the goose twenty-three pounds, though individuals have been known to reach as much as fifty pounds. The best way to grade up a flock is to procure a gander of the Embden breed, mate him with large common geese and mate the female offspring with a Toulouse. The males should then be pure-bred Embdens, as they are pure white, which is an advantage where the feathers are considered a valuable product.

THE LARGE BREEDS OF DUCKS.

The Pekin duck has become very popular, attributed by some to its large size, but it does not exceed the Rouen or the Aylesburg in weight, nor is it as tame and gentle. The two advantages possessed by the Pekins are white plumage and yellow legs and bills. As long as the purchasers in market continue to judge of quality of flesh by the color of the legs, the Pekin will lead, yet the color of the legs of a fowl does not indicate quality. The Aylesburg duck is also white in plumage, but the legs and bill are flesh color. As a table fowl it is superior to the Pekin, having more breast meat. The Rouen duck is fully the equal of the others, but being of variegated color it cannot compete with the Aylesburg or Pekin except for ornament; but it is, without doubt, the most beautiful of all the aquatic domestic birds.

MOISTURE IN INCUBATORS.

"MILLER PURVIS," CARDINGTON, OHIO.

It is about ten years since I began to try to hatch chickens in incubators and each year I have made some progress, until now I begin to think I know something about the operation. I have taken a lot of eggs and broken some of them every day and examined them under a microscope to see what changes are made in the process of incubation This was a most interesting study, and I learned more from the experiment than any other I ever tried.

In all these years since I got my first crude incubator up to this season the question of moisture has been unsettled with me. The first makers advised the use of a great deal of moisture, and I supposed they knew something about how to run an incubator, but one bad hatch after another, year in and year out made me have some doubts about their proficiency. I never had any trouble getting the eggs to start and go along all right until hatching time, when I would always have a lot of chicks dead in the shell. For three years I had not had a chick hatched under a hen, because notwithstanding I could only get forty or fifty per cent hatches it was cheaper to hatch them in an incubator than it was to bother with hens. This year I concluded to try the matter thoroughly, with both hens and incubators. I set hens in nests made of moist earth and in boxes three feet from the ground with nothing in them but cut straw, and I could see no difference in the hatch. A Sebright Bantam hen was set on twelve of her own eggs and hatched nine chicks. One egg was infertile and two chicks died in the shell. This was a seventy-five per cent hatch, and the dead chicks were equal to sixteen in a hundred. Two mongrel hens were set on twenty-six eggs and one of them hatched five chicks and the other none—left her nest. Two pure Brown Legborns wanted to sit and I put thirteen eggs under each and got ten chicks from the twenty-six eggs. The others were broken or chicks died in the shell. The chicks were given to one of the hens and the other one was reset and is now sitting out her fifth week. More about the Legborns another time.

I have two incubators. One is a hot air "Model" the other is a hot water one made after a plan of my own, for I thought I knew something about how a machine ought to be made. The "Model" is a self regulator, and works completely. The hot air machine has no regulator and works very nicely. No free ad. in this—I have no time to go into the incubator business. I set these two machines the same day with eggs from my flock and from that of a neighbor, keeping the eggs separate. Not a particle of moisture was put in either machine until the fifteenth day when I put three old saucers full of water under the egg tray in the hot water machine. At that time it was perfectly dry for this was the second hatch this season. The position of the saucers was such that the water evaporated very slowly, and at the beginning of the nineteenth day I could not notice that any of the water in the saucers had evaporated. That morning an egg was pipped and at noon another one was in the same condition. The evening of that day I looked at the pipped eggs and both of the chicks were dead.

I gave them particular attention and found that the chicks had dried fast to the shell and had evidently perished from that cause. I reasoned that the air in the egg chamber was so dry that as soon as the chick pipped a hole in the shell all the moisture was absorbed by the air, and the death of the chick followed. I had not taken any eggs out of the machine as I wanted to keep the drawers full. There was an inch of dry pine sawdust in the bottom of the incubator, and I wet this with hot water and shut the machine up, not daring to hope for a good hatch when the very first chicks to pip had both died. This was in the evening. I got up pretty early the next morning and felt much better to find about thirty chicks hatched and looking nicely. That day was Sunday, and the twentieth day from setting. I gave that incubator pretty close attention during the day and by night I had eighty-seven as nice chicks as I ever took out of an incubator. They came out of the shell clean and almost dry. There was no appearance of the slimy mucous that is so often seen on incubator chicks and never on those hatched by a hen. I then broke the eggs that were left and found fourteen chicks dead in the shell and the other eggs infertile. Out of 101 fertile eggs I got eighty-seven chicks and they are now twelve days old and I have all of them but five, the others being lively as crickets and running around in the orchard past all the dangers of early chickenhood, for they are Leghorns and covered with feathers. If a Leghorn chick looks hearty at two weeks it is practically safe.

The eggs in the "Model" incubator were not at all good, not being fertile, and from 100 I tested out about forty. I have noticed that when a large number of eggs are tested out of an incubator the remainder do not hatch well, if all are from the same flock. This I presume denotes lack of vitality in the stock, which results in weak germs. I had but small hope of this machine, but the hatch was just forty-five from about sixty eggs. I know some of those left in were infertile, but I did not break them to see how many chicks were dead in the shell, as I was very busy and the eggs were buried before I knew of it. This machine was treated the same as the other, only the moisture supply is adjustable and fully under control, and the amount was increased from the nineteenth day until the hatch was complete on the evening of the twenty-first day.

It seems to me that this was a pretty conclusive test. I had two machines built on entirely different principles. One a hot water machine and the other hot air. Out of about 150 fertile eggs I got 132 chicks and only six of them have died as yet, and I have no fears for the remainder. Of an earlier hatch only one died, and the others are now seven weeks old.

Now for the theory, which is not all mine the POULTRY KEEPER being responsible for most of it. When too much moisture is supplied the chick grows too large and has not room to move its beak or to get leverage to strike a blow hard enough to break the shell, and dies at maturity. This was proven by a neighbor who bought a new machine and was told by the maker to keep wet sand in the bottom all the time. He got sixteen chicks from 120 eggs, and there were over seventy dead in the shell, and I noticed that the chick was crowded in the shell until there was not a particle of room for it to move. Now more theory; about the time the chicks have matured the egg chamber should be filled with vapor to prevent evaporation from the shell when it is opened. This leaves the chick free to act and it comes out strong and in its natural condition. "How about the hen-hatched chicks?" you ask. "Don't they open the shell and hatch when the weather is dry?" Certainly, but you know, or ought to, that a hatching hen sits as closely as possible to her nest, and there is practically no place for the moisture to escape from the shell, while in an incubator there is a large open space that is filled with air ready to drink up moisture from the shell if it is not already saturated with it.

I have no interest in any particular make of incubators, and I am trying to discover the best way to make money from chickens at market prices. All the experiments I have ever made were for my own benefit, and for the purpose of advancing knowledge on the subject. I hope others will conduct some careful experiments along this line and report. By doing this we shall get at the facts. I am perfectly satisfied that I know how to hatch with an incubator now, but I am open to conviction. My incubator has beaten my hens every time this season.

HE HAS THE MUMPS AND EXPERIENCE.

J. D. CULP, HUNTINGTON, IND.

I am having the mumps at present, and have to keep quiet for a few days. In order to pass the monotony, I will give our experience. I began to take your paper last year, and began to study the importance and profit of the poultry business. Living on a town lot, 50x120 feet, and having a house of nine rooms, woodhouse, and stable 16x28 feet, I have very little space left for the poultry. Yet we resolved to see what we could do. We set one hen which gave us nine chicks, and another which gave six. Some were killed by a boy, and two roosters were sold for eighty cents, which left us ten hens. These we mated with a new Plymouth Rock rooster. The pullets began laying when about five months old, and we received from one to four eggs daily right through the winter, except one week in February, when the weather was so extremely cold. They became broody in April, and on the 8th day of May we had chicks. We have about fifty at present, besides the old ones. We had the best of success with the early hatches, but the chicks brought out in June nearly all died. We found them infested with lice. We have two hens that want to set for the second time this season; one is a pullet that was hatched September, 1892, and is only nine months old. We have raised, so far, about sixty per cent of the eggs set, and about ninety per cent of those hatched. From my brief experience, I am satisfied that some of those "exaggerated stories" in the POULTRY KEEPER are so. We have sold, during the winter, $1.40 worth of eggs. We feed screenings at sixty cents per one hundred pounds, which makes it about twenty-five cents for each chicken, or a cost of $1.50 for the winter. We have about $15 worth of chickens. I don't count my time, for it otherwise would have been a total waste, as I attended to the chickens before and after working hours. I am satisfied that all a man needs is good common sense and good business principles, and the chicken business will pay, providing he will start small and grow up.

HAS FAITH IN THE MINORCAS.

C. H. KILMER, WAVERLY, N. Y.

Your paper came to hand the other evening, and was read with as much satisfaction as ever. After reading it through I always wish the month was around for another feast. I was pleased with what you had to say on page sixty, about breeding for eggs or the Standard. I have been breeding the Black Minorcas for three years, and have bought males each year to give vigor, and to get eggs, and I get them, too. I think the ninety-eight point hen (for eggs) is to be the coming hen. I have put in Langshans this spring, and will try them along side the Minorcas, but if they lay more eggs than the latter, they will have to get up and dust, as I find the Minorcas *the* layers.

HOW TO MAKE NESTS.

J. C. BAKER, RICHFIELD, ILLS.

In arranging nests for hens in the poultry house, the average farmer takes little if any pride in guarding against things that are the means of many accidents and bad results with laying and sitting hens, when, if he would stop and think a minute, he would quickly discover that it was much to his interest financially, as well as a saving of time, to build nests that would better fill the requirements of a successful poultry raiser. The plan I have adopted, and the manner of construction, I will give to the readers of the POULTRY KEEPER, and should it meet with their approval, I should like to have them say so.

Make a frame of any light material in strips, set edgeways for strength, two and one-half feet wide and any length you desire to have the row of nests. Next get four 2x4 posts (two for back side at each corner, and two for front side at the other two corners). The two back posts must be cut three and one-half feet, and the front posts two and one-half feet long. Nail each post securely to the frame, sixteen inches from the floor. Now nail strips from top of hind posts to top of front posts to act as supports to the top. Next nail cross pieces, 2x2 inches, on bottom of frame, just where you want each partition to come. Be sure to make each nest roomy. Now on top, at both back and front, nail two boards edgewise over these cross pieces. This will leave a crevice of two inches beneath the nest in which can be slipped light boards loosely for a bottom. These can be removed at any time, and the nest thoroughly cleaned. You now have the back and the front of the nests, with lath lattice ends and partitions between the nests. This completes the nests, after which fit in the loose bottoms to each nest.

Back of the nests is the passage way, which should have a board for bottom. Next nail on top with any kind of boards, leaving a space twelve inches wide at lower and front side, and the full length of the row of nests. Over this space make a lid to fit, and hinge to upper portion of top. This now completes it. If left movable, it should be set up closely to the side of the house, there being no back to it. This makes it entirely closed, with the exception of a small space to be left at one end for the hens to enter. The lid remains closed, except when it is desired to get the eggs from the nests. I find that hens take to this kind of arrangement better than anything I ever tried. They are not so apt to disturb or crowd on the nests of each other when either laying or setting.

This nest can be made movable, set on four legs sixteen inches high, or, if desired, stakes driven in the ground floor and the slanting top nailed fast to the side of the house. The advantage in having it movable is the readiness with which it can be cleaned to rid it of any vermin. But I have none in those that are fastened solidly to the house, as the bottoms being easily removed the nests can be well cleaned out. When fresh straw is placed in them I carefully sift insect powder and sulphur in and around the nests as a preventative. Besides the hens have their daily dust bath. The dust bath should be placed directly under the nests; this utilizes room, and also allows the dust to raise in and over the nests. No lice can live or harbor where this method of dusting is used.

The POULTRY KEEPER is doing good work, and in a way acceptable to the people engaged in poultry raising, especially the farmers and amateurs. May it continue to inform its readers in chicken "lore."

EXPERIMENTS IN CROSSING.

F. C. GANSZ, PALMYRA, MO.

I have experimented some in the last few years. I have been raising poultry ever since I was a boy. I have had many ups and downs, have succeeded and also failed. I have experimented some in crossing. First, I had a nice lot of Barred Plymouth Rocks. They didn't seem to suit me, so I took the hens and crossed them with a Black breasted Red Game cockerel,—and allow me to state right here that this was the best cross I ever made.

Second, I crossed, then, with a purebred Light Brahma. This did very well, but not so satisfactory as the first. I have now crossed with a Rose-comb Brown Leghorn, and also with a Black Minorca, but of the two crosses I find the Black Minorcas by far the best up to this time. They are all hardy, while the cross of the Rose-comb Brown Leghorns are most all sickly looking chicks, although they have been raised together, and have had the same advantages

[Your family, or strain, of Legborns may lack in vigor.—ED.]

KEEPING FREE FROM LICE.

G. J. FABER, SEYMOUR, CONN.

I would like to give my experience in keeping poultry free from lice. Keep the house clean, well-ventilated and white-washed in summer time, and the roosts and crevices well saturated with kerosene oil. If there is a board floor in the house, it should be cleaned once a week, and dirt from the road put in, and also for dusting. By this method you will not only be free from lice, but the fowls will be healthier. Also, take copperas and salt, and mix with hot water, with which sprinkle over the floor and in the runs.

THE BRONZE TURKEY.

R. W. DAVIDSON, GLENDOLA, N. J.

Of all breeds of turkeys, the Bronze stand at the head. So say the breeders of this variety, and as I am a breeder, I will say "Amen!" The main reason why this breed is so popular, is on account of its growth and large size. The toms are very beautiful. The Bronze variety are good layers, and if fed and cared for the same as other poultry they will produce a goodly number of eggs. They will stand confinement fairly well, but do best when given full liberty. I have had individual turkeys to lay as many as sixty-eight eggs in a season. If fed and regularly cared for, they do not wander far away. I give my turkeys the liberty of a 160 acre farm, but they seldom go more than from 200 to 300 yards from the barn buildings. Turkeys do very little damage to growing crops or truck, and won't turn the garden upside down to see how deep the soil is, as the hen is wont to do. When a large number of turkeys are raised, or rather held over for laying, the best way to care for them is to keep seven hens and a tom in a flock. A house about 10x12 feet, with a yard 12x40 feet, will answer nicely for such a flock. During the laying season the birds should be confined part or all of the forenoon, and have full liberty in the afternoon. This will prevent them from stealing their nests, as there is more hard work than romance in patiently following a turkey hen, dodging behind trees and bushes to keep out of sight, for a half mile in order to find out where she is laying. They do not often steal their nests the first year, but must be watched after that. Always feed each flock in their own house at night, but do not give too liberally, nor of a very fattening quality. Whole wheat makes an excellent night feed, and a generous mixture of soft scalded food with meat, is excellent for the morning mess. The turkey houses should be placed as far apart as possible. One house could be placed near the dwelling, another aside the barn, and several throughout the orchard, and so on. Chicken thieves are very partial to turkeys, and due precaution should be used. Mr. Jacobs suggests to hire a detective until the neighborhood is rid of the pest. Turkeys are easy to raise, if a few rules are carefully followed. I generally use common hens for hatching the eggs. I carefully dust the hen with insect powder when I first set her on a nest of nine eggs, repeating the dusting each week excepting the last. Lice means death to turkeys. After the eggs are hatched, I place the brood in a coop with a movable bottom—the floor should fit inside of the coop so it can be cleaned out, and sand put in every day. Dampness is fatal to young turkeys. Feed as chicks are fed in brooders. A little whole wheat should be given between meals. The three principle meals should be a variety. Scalded corn meal, wheat middlings, etc., with oat meal (dry), occasionally. Feed often, what they will eat up clean, and when a month old, give meat. Don't skip a meal until twelve hours before killing for market. The Bronze is unquestionably the market bird. By Thanksgiving they will weigh from two to ten pounds more than any other known breed of the same age and care. On a flock of fifty turkeys, a gain of only four pounds per bird would make 200 pounds, and at eighteen cents per pound it equals $36.00, an amount not to be sneezed at. There are many farmers who are lost that extra four pounds every year by sticking to their scrub stock. The talk we occasionally hear about the Bronze being flabby, course, etc., is all stuff and nonsense.

A PRACTICAL EXPERIENCE.

WM. A. LAMB, MANHATTAN, KAN.

I have been in the poultry business for four years. The first year I raised 340 chickens and forty-five turkeys, with three dozen hens. The second year I lost 700 with cholera. All the remedies I could get would not stop it. I, however, saved a few by moving them to new quarters. Last winter I had a siege of roup. I would recommend the axe as the best remedy for both roup and cholera. You can cure roup if you take it in time, but it really does not pay, especially if they have canker in the mouth. You may doctor some of them for weeks and then have to give it up. This year I started with 150 hens, and sold 292 dozen eggs and 600 chicks. The eggs just paid the feed bill. My plan for raising chicks with hens is first to let the hens set wherever they want to. Put a rag, wet with coal oil, in the bottom of the nest. Feed them every morning all the corn they want. As soon as the chicks hatch grease the hen and the chicks a little, and put them in a coop. Use drygoods boxes, with slats on one side so the chicks can get out. Keep the hen up about five days, and she will go back nights until she leaves her chicks. Give each hen twenty or thirty chicks in warm weather. I have a feed coop made of lathe, with board cover and floor; the larger chicks and hens cannot get in, and the little fellows can get their shares without getting run over. Keep wheat in there all the time, and feed curds and chops twice a day. This plan would just suit farmers' wives who are usually crowded for time.

SUBSCRIBE for the POULTRY KEEPER

WHY CHICKS DIE IN THE SHELL.

R. S. KAUFMAN, KELLY'S POINT, PA.

Having just read in June POULTRY KEEPER an article on chicks dying in the shell, by Mr. L. B. Pettyjohn, I think his judgment is right in regard to foul air accumulating in his incubator. I think in Mr. J. L. Campbell's catalogue our friend could find just what he is seeking after. The whole trouble, it seems, comes from not proper ventilation, the main point being to ventilate without a draft; the more air blowing through a machine the more moisture required, for air will absorb the moisture out of an egg as well as it will out of a cloth if hung out in the wind. Mr. Campbell has proved by experiments that eggs will not hatch when sealed up in glass. By sealing eggs in glass boxes he has found that they will not hatch the chicks unless properly ventilated. In one experiment he sealed up an egg so no air could get in, and the germ died about the seventh day. Another he left in ventilation at the bottom only, and this germ lived until the fifteenth day when it also died from foul air accumulating and leaving no escape. In another, he made a small hole at both top and bottom of the box and this egg hatched. Now Mr. Pettyjohn's trouble comes under the second experiment. There must be some ventilation or the egg would not hatch until the nineteenth or twentieth day, but when there are 100 chicks out they certainly throw off foul air in large quantities, the shells from which they have just emerged have a foul odor about them and having no escape raise and circulate around in the machine. His chicks panting for their breath seems like having too much heat at time of hatching. I am running an improved Excelsior incubator, and had good success last season, but no success this year whatever. I ran my machine in a dry cellar, and supplied moisture on the nineteenth day and hatched eighty-two per cent of fertile eggs. A friend of mine ran one of the same make and supplied moisture from the start and had an excellent hatch. Both machines being run in dry cellars and the one supplied moisture from the start and the other on the nineteenth day and both had good hatches. Does this not seem as though there was something about the moisture business that has not been fully understood as yet? About ventilation, my machine has one small hole in the bottom, directly in the centre, while a machine of same make (both machines arriving at the depot at the same time) had four holes for ventilation, having one hole under each tray. Now was this the fault of the manufacturer, or was it the fault of his employees? My machine hatching the best of the two. I believe all the ventilation that is necessary is just enough to carry off foul odors and keep the air pure and moist, which is necessary for artificial hatching. But when Mr. P.'s chicks die in coming out, being part out, he has either too much or too little moisture; but I am inclined to think he has too much as they grow too fast and become swelled up, and die in trying to get out. I have had some in the above way, while some in the very same hatch were all right. There is mystery about ventilation and moisture, in artificial hatching, which can only be solved by experiments and some sound brain work. We must follow nature as far as possible in artificial hatching, or we will never have success. If Mr. Pettyjohn would write to Mr. J. L. Campbell, West Elizabeth, Pa., and secure his catalogue, which would cost him five cents, but is worth one dollar to any man running an incubator. Now I would like to hear from other readers of the POULTRY KEEPER on the subject, as it is the only way we can help each other out of our troubles. We hope to hear from Mr. Campbell through the POULTRY KEEPER on the subject, his having thirty years' experience in the incubator business enables him to solve the difficult problems that confronts us amateurs.

WORMS IN THE INTESTINES.

IRWIN MATHENY, LOUISVILLE, KY.

Several weeks ago I bought a lot of "scrub" chickens to fatten up for the table. One of them died Sunday, after looking droopy for several days. I thought I would try to find out what the trouble was, and explored its "interior department," I found the intestines full of worms, all sizes, from one to two inches in length, pure white in color, and tapering to a sharp point at each end. I have always tried to follow Bro. Hunter's advice, and assimilate all I read in the POULTRY KEEPER and *Farm Poultry*, but do not remember to have ever seen a similar case mentioned in either paper. If any of your other readers have ever run afoul of a case like this, I would like to be advised of a remedy. I notice that the "scaly leg" question is receiving considerable attention in the POULTRY KEEPER. My remedy is to scrub the fowls' legs thoroughly with strong soap suds, using an old tooth brush. After drying them off with a towel, I rub them with common coal oil. It requires about two minutes time to fix up each bird, and this treatment does not seem to have any bad effect. Your paper will not stand much more improvement as to my notion it is perfect.

(It is not unusual for worms to affect fowls. The remedy is a teaspoonful of sulphur for ten hens, once a day, every other day, for a week, alternating with half a teaspoonful of spirits turpentine in the food, or forced down their throat, for ten hens.—ED.]

ADDING EGGS AT DIFFERENT TIMES.

J. W. DUNN, ELIZABETH CITY, N. C.

In the communication published in the July issue of the POULTRY KEEPER, I neglected to state that I included forty-five duck eggs in the 207 all told in the incubator, which was not included in the 125 chicks hatched up to April 12th, as they did not come off until a week later, and as I promised to give my second experiment of putting in a portion each week, with two evaporation pans from the start to the finish, with a temperature of 103, or as near it as the machine would regulate. I put in fifty-two Plymouth Rock eggs, fresh from my yards, on April 15th, and again on April 24th I put in fifty (part Plymouth Rock, Langshan and Light Brahma) and on May 1st, I put in fifty more from the same yards as the week before. On May 5th and 6th I took out forty-six as fine chicks as I ever handled, and on May 7th and 8th I got forty-seven out of a possible fifty eggs and from fifteen Plymouth Rock eggs I got fifteen chicks, and on May 14th and 15th I got thirty-seven. I never examined an egg to see if it was fertile, neither did I examine to see if any had got turned the wrong way, as a learned writer in the May issue gave us the cause of chicks dying in the shell. I cannot see how such a catastrophe could be avoided, as the writer gave no cause for nature committing such a grave error. One might infer that the hen had been roosting out in a wind storm, or perhaps had a crooked nest to lay in, and since the learned writer has made such a wonderful discovery, I would like to have him give the cause for the chick getting in the shell the wrong way, as I have been taught that there can be no cause without an effect, and neither can there be any effect without a cause. I have heard and studied many theories for chicks dying in the shell, but never have I ever heard or read such a ridiculous theory as given by Mr. Campbell, in the May number of the POULTRY KEEPER, without giving any cause, or assigning any reason for such a theory. I was in hope that some person would reply to such a solution, who had more capacity than I possess, for I don't set myself up as a scientist or an expert. I have been breeding high grade poultry for twenty-two years, and have learned many things from experience, and there is yet much for me to learn besides Mr. Campbell's theory of the chick getting wrong end in the shell. I have found success in raising poultry by plenty of patient work, and at all times using commonsense, and in writing my experience as above, I don't claim for it an advisable method. I have given it as I found it to be. I exhausted some patience and was under great suspense but was rewarded with chicks coming perfectly clean from the shell, and with no assistance from me, and if others can receive any benefit from this method, I am satisfied for my trouble, although I believe that better results can be arrived at by putting all of the eggs in at once, and giving no moisture the first week, one pan the second week, or up to the 16th day, when all allowed for the machine should be given.

WHY CHICKS DIE IN THE SHELLS.

L. R. OAKES, BLOOMINGTON, IND.

I have been reading with interest the articles appearing lately in your paper on the subject of "Why Chicks Die in the Shell"; but my experience leads me to believe that Mr. Pettyjohn does not have the correct theory in his article in the July POULTRY KEEPER. I began making and experimenting with incubators in 1885, and have tried nine different styles of hot water incubators, varying in ventilation from a constant and quite free circulation of air, to the opposite extreme—a machine made as nearly air-tight as possible.

My first incubator was a small one, holding only 130 eggs, and was ventilated by five half inch tubes running up through the top, and one tube admitting cold air through the bottom. I put in two moisture pans, about nine inches square. Meeting with very poor success, I began to reduce both the moisture and the ventilation. After corking up all the ventilating tubes, and reducing the moisture supply to none the first week, one pan about four and a half inches square the second week, and another the same size added the third week, I got my first good hatch—about eighty per cent. The machine was in a dry cellar. I now make all my incubators without any ventilation, relying entirely upon the change of air which takes place when the doors are opened, which I think is amply sufficient.

On the 10th of June last I filled three incubators with eggs bought in the market—654 all together. This, of course, was bad policy, but the machines had been heated up two weeks waiting for eggs engaged, but which failed to come; so I took the "store eggs" as the last resort, and the result was that on testing them over I took out 224—nearly all perfectly clear. This did not promise well for the strength of the germs in the remaining 430 eggs, but on the 14th day, which was the last time I looked them over, they seemed to be doing well.

On the seventh day the air cells seemed but little larger than in fresh eggs, and on the fourteenth day they had increased in size very little, so I put in no moisture till the eggs began to pip. The result of the hatch was 264 chicks, or about sixty-one per cent. of the fertile eggs. The remainder of the eggs nearly all contained full grown chicks. Many of them pipped and then died, and quite a number broke the shells clear around and then had not strength enough left to get out. Some of these which I happened to find just at the right time I helped out, and they made good strong chicks.

The greater part of the chicks that came out on the twentieth day, were strong and lively from the start. Those hatching later were weaker. Some broke the shell all around, but used up all their strength in doing it, and were too much exhausted to get out. Others were able only to pip the shell, and many did not succeed in breaking through at all. The first chicks were not the strongest because they hatched first and had purer air to breathe than those coming afterwards, but they hatched first because they were the strongest.

In every such case—where a large number of chicks die in the shell, unless the eggs are from sickly or debilitated stock, you may be sure some condition of incubation was wrong. The strongest chicks hatch in spite of it, but the weaker ones are not able to do so. To determine just what is wrong is not always an easy matter, but in this hatch of mine the trouble was not hard to locate. I examined many of the eggs containing dead chicks, and in every case the chicks seemed to fill the shell completely. There was scarcely any air cell at all. This was also the case with every chick which I helped out of the shell, showing plainly that the trouble was too much moisture. The cellar was too damp. I was thrown off my guard in the matter by the fact that in April I ran one of the same incubators in the same place; and, owing to the enlargement of the air cells added a little moisture the second week, and more the third week, and got a hatch of eighty-five per cent. of nice strong chicks. One fact I had failed to take into consideration was in April the weather was cool, and the furnace in the cellar was kept running a good part of the time, which caused the difference of the moisture of the air. All other conditions were exactly the same, or as nearly so as it was possible to make them.

None of the machines have any ventilation except when the doors are open. Too much moisture, I think, is by far the most common cause of chicks dying in the shell. The condition of the air in the incubator room determines whether or not moisture should be supplied before the eighteenth day.

HATCHING EXPERIENCES.

SAMUEL WALTON, BARNESVILLE, OHIO.

I have now had four hatches with my hot water incubator, with moderate success. The first one,—140 eggs,—took out in the second week twenty-one infertile eggs; about ninety hatched, some of the chicks being deformed, weakly, etc., and died or were trampled to death. I have now about fifty-six, about ten weeks old. The second hatch gave about sixty-five strong ones, but when four days old, by neglecting to shut up the brooder at night, either rats or cats carried off forty-four of them. In the second hatch I forgot to put in any sponges until the eighteenth day. In the third hatch of 144 eggs, I took out eight infertile ones, and only had about sixty-two strong chicks. In the fourth hatch, 140 eggs, I took out five infertile eggs, and only hatched fifty-eight chicks that were fit to put in a brooder. I followed the directions about the sponges carefully. I suppose from the fact that so many hatched out all right, the loss was largely due to the little vitality of the eggs.

Two hens set at the same time, with fifteen eggs each, hatched twenty-one chicks; they broke several eggs, and only two of the eggs left did not hatch. In the last hatch, in the incubator, I took out three lively chicks on the seventeenth day, and the rest hatched on the twenty-first day. In the last hatch I had the ventilator hole open all the time, while in the others I put a corncob in the hole until towards the last.

I bought four White Leghorn pullets last fall, to see if they would lay better than my Plymouth Rocks. All the pullets became broody and one of them wanted twice to set. I have eighteen hens now, and they have gotten down to about four eggs a day. I feed them bran in the morning, and whole wheat at night, and as they seem so inclined to be broody, I have been moderate in the amount of feed. I have had no gapes this season with the brooder chicks, neither have they had any special disease. My mam food has been equal parts of cornmeal, ground oats, and bran.

O! FLY TO OUR RELIFF!

S. JUDSON, MERIDEN, CONN.

I see you, the editor, are in deep mourning because somebody, with sick chickens did not send her address; and it occurred to me that my address might do just as well, as a dozen others here in Kackleville are in the same scrape. The particulars are these: I hatch seventy-five chicks from 100 eggs every week (have done so since February). When one week old they all die. I take seventy-five more out, and fill the box with more eggs. Then I bury the seventy-five dead chicks and whistle "There'll be no parting there." If I was alone, I would bear my sorrow in silence and not mention it, but the fact is I know lots of others whose chicks die just as mine. I can raise about ten out of seventy-five. If these were pullets and would lay lots of eggs, I would not mind the losing of sixty-five weakly chicks weekly. But seven out of the ten are always roosters. I only got three pullets out of 100 eggs. Does poultry pay? Don't say it's lice, for it aint! New houses and grounds, and not a louce here. What do I feed? Well, about everything. Everyone I meet has some new kind of feed, and I go home and try it, and the next morning I find more dead chickens. When hatched they are nice—but, "the good die young." When four days old, they begin to fool with death and die from that date for ten days, when, as I said, only ten remain. I forgot to mention that I have three machines to get a hatch every week. Some of the chicks have bowel troubles, but not all. All their vitality seems to go to their wings, wichh grow while the chicks remain stationary. How would it do to de-wing them, as they de-horn cattle? Sometimes I put tweuty-five in a brooder, sometimes seventy-five. Tried them in a brooder house and yards, then out in the unbroken wilderness; put one flock in a flower garden, and one in a pig pen, but food nor location does not matter, they just die. We set six hens and they got out ten each; now one hen has one, another has two, another three, etc. The brooders are just hot enough to keep them from crowding. They lay down in the sun and die just as peaceable as at midnight. No gapes here! Now and then one gets blind, but not many. It's not the eggs, for I have tried eggs from several flocks.

Now tell me, as a friend, and the public at large, does it pay to use 100 eggs to raise ten chickens (just ordinary chickens, not prize winners)?—or, would you advise me to feed myself on the eggs daily, and not worry about the future?

(Poor Mr Judson! Kackleville must be a misnomer. No lice, no gapes, not the fault of the incubators, the brooders nor the eggs. *Feeds everything*, but only a few cases of bowel troubles, and occasionally one goes blind. Fate is against you, Mr. Judson. The fact that those chicks meet such a peaceful end, speaks well for their conscience. Persevere, Mr. Judson—that is, feed yourself.—ASSOCIATE EDITOR.

FEEDING FOWLS AND CHICKS.

G. M. WILSON, NEBRASKA CITY, NEB.

It has been some time since the POULTRY KEEPER has received any correspondence from this part of the state. I truly coincide with each of the writers that the POULTRY KEEPER is worth a great deal more than the price of the paper, and I take a great deal of pleasure in reading what the different writers have to say on the many topics which are of interest to the poultry raisers at home and abroad. I somewhat imagine that the editor would like to know how many young chicks, taking in the whole number, this young poultryman has at this date of writing. I have in the neighborhood of 200, that are all the way from a week to three months old. As far as I can see, there are only one dozen and a half that have died after they were hatched out. But, as before, I have lost one-half to three-fourths out of each hatch, from chickens dying in the shell. I must truly say that I do like the POULTRY KEEPER, because it gives such excellent ideas in regard to raising and hatching chickens, either for one's own self or for raising them for the spring and summer markets.

We have had quite a few heavy rains in this part of the state to help the crops along to maturity. But in, between the rains, we have had some very warm weather which has, in its manner, been just as much of a help as the rain has been, to the farmers in this part of the state.

I suppose that you would like to know how and what I am feeding my flock of chickens, big and little. Well, I will tell you. I feed my little chicks siftings out of cracked corn, and siftings out of bran; that is, I wet it, after it is stirred evenly together. Then I take some green lettuce, radish, beets, or onion tops, and cut them into their feed for each feed of the day. Then, for the larger chickens I take and mix together cracked corn and bran, then wet the mixture with water and give it to them in their respective feeding places. When we have enough shorts to go along with the bran and corn, then, of course, I put in enough of the shorts to make the feed relish well with them. I sent away and bought me a real cute bone mill for the purpose of grinding green bone for my flock of old hens, to have the benefit of all the green bone that I can get at the different meat markets here in the city. The kind of make that I bought was the Webster & Hannum, Cazenovia, N. Y.

GREASE ON CHICKS.

Do not grease chicks if it can be avoided as too much grease is injurious, and never use coal-oil. If the large lice are found use lard or sweet-oil, the oil being preferred. Ten drops of oil of pennyroyal may be added to a large tablespoonful of the oil, and with the finger rub one or two drops only of the oil well into the down on the neck and head of each chick

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Too Much Stock.—I like the POULTRY KEEPER, and would not know what to do without it; for good advice it has no equal, and what it says it means and fears no one. If I had paid more attention to it I should have been better off in both time and money. I kept two hundred hens over last winter, but came near making a failure of it. I had more stock than room. The same with my chickens this year—I tried to do too much. If more of the readers would tell their experience, it would help those who are new in the business. Experience, I find, is a dear teacher. My grape vines are full of grapes this year, but the grapes will not pay for the eggs I planted around them. My worst trouble is to get eggs to hatch, and to raise chickens until they are from four to six weeks old. After that I do not have much trouble.—*F. I. Bennett, West Point Pleasant, N. J.*

Gets 85 Per Cent.—I have just received the June issue, and consider it a valuable paper to any one interested in poultry. I found an article in the paper by which I was benefitted a great deal; it was by J. L. Campbell, on "why chicks die in the shell." I found everything just as he said it was, viz., so much evaporation must take place before an egg can hatch. I lost hundreds of chickens before I read that article. I run my machines in a cool dry cellar; the temperature varys very little winter and summer, day or night. I have no trouble to get good hatches all the time. I averaged about 85 per cent. this season. I intend to enlarge my business about three fold next season.—*W. W. Bottimore, Galt, Cal.*

Mended the Eggs.—I have been a subscriber to your paper for the last three years, and I like it very much. I had an incident occur which I think more than common. I shipped a setting of eggs to a gentleman in Toledo, and one was broken on the way. The shell was cracked the full length, with side fractures, but the gentleman put court plaster over the cracks and set it with the others, and it was one of the first to hatch.—*F. S. Boynton, LaPorte City, Iowa.*—[It is not unusual for eggs to be mended and have them hatch.—ED.]

Information for the South.—I like your paper very much, but your information is for the Northern clime. We have no snow nor ice, or small places, and no tight houses to build. We can hatch all the year round except three months in summer. Please give a little information for us Southerners. I will subscribe later but in combination.—*Lee Elder, Belox, Miss.*—[If our friend had been reading the paper right along, he would have seen plenty of information for the South. A non-subscriber is a poor judge.—EDITOR.]

No Trouble With Lice.—I don't have any trouble with lice. I kerosene the perches once a week, and whitewash the entire place twice a year. We have Houdans, Plymouth Rocks, Leghorns and Bantams. I feed bran, cornmeal and scraps in the morning, meat scraps and vegetables at noon, and corn and wheat at night. I also give wheat at 10:30 a. m. In winter I feed hot food, and get plenty of eggs in return. I always keep fresh water before them.—*Jas. N. Fitch, Yonkers, N. Y.*—[Never feed at noon.—EDITOR.]

Found Lice at Last.—I could not think lice were troubling my chicks, as we are on a new place, and the little ones are kept in clean quarters, away from the hens. I had looked occasionally, not expecting to find any, but on reading Mr. E. W. Parker's advice to "look thrice," and on the throats, I put on my glasses, oiled my fingers, and really looked—and found many on the throats and under the heads. This alone I consider worth the subscription price, and, besides, I find many items of interest and benefit.—*Elder Lodge, Springfield, Mo.*

Combs Will Freeze.—Some time ago you requested your readers to give their experience with both rose and single comb in winter, and so I will tell mine. Last winter I placed both rose and single comb birds in the same house, and lost one of the rose comb birds and had another terribly frosted, while my single comb birds came out all right.—*B. Breighner, Clinton Illinois.*

Thinks We Are Off on Corn.—I like your paper very much as a guide in raising poultry, but think you are a little off on the corn question. I think it the main food for all kinds of poultry and farm animals.—*J. H. Hayes, Lower Squankum, N. J.*

"Fills the Bill."—The POULTRY KEEPER comes regular, and just fills the bill. I don't see how you get in so much solid poultry information for so little money.—*John G. Hudson, Akron, Col.*

POULTRY FARMING.

We have a letter before us from a young man who wants to go into poultry farming, and he asks the usual questions, winding up with "Does it pay?" That question is asked a thousand times a year, and the inquirers all know that poultry farming, like any other kind of farming, will pay if it is managed right. The evidence that it will pay, that it has paid, and that it is paying now is overwhelming. It pays the man who knows how, and who has the requisite energy and business ability. A prominent grocery firm in this city has, within a few years, worked up a family trade in fresh eggs of nearly half a million dozens annually. It was done by looking up the men who knew how to get eggs in the winter season, when fresh eggs are a luxury. A representative of the firm said to us: "We care nothing for the man who can furnish eggs only when any fool can furnish them—when uncared-for hens have a mind to lay them. We are looking for the man who can send us eggs when all his neighbor's hens are frozen up." They have found quite a number of these wide-awake men, and are paying them good prices for their eggs.

We understand that they take the year's supply, winter and summer, simply to hold the winter product. We referred, last winter, to one of these men who lives near Orrville, Ohio. He has a few acres of land, and keeps 300 hens. This grocery firm sent him $69.80 for his February eggs last winter, and from March 4th to 11th, one week, his fowls shelled out 130 to 158 eggs per day, just when they were bringing the tallest prices.

Oh yes, poultry keeping pays the man who puts brains, energy, skill, and the necessary capital into it. But it must be made an all-the-year-round business. If you give the hens a vacation, let it be in the summer, when eggs are low and poultry not wanted. The dairyman who feeds the heads off a lot of dry cows during the winter never makes it up during the summer, and the poultryman who lets his hens manage the business as they please will soon require an assignee.

The man who quietly submits to circumstances, in any branch of business, is the man who gets left. The man who makes circumstances is the man who succeeds.—*Ohio Farmer.*

CANKER CURE.

I have had a first-class case of canker head, and as I had good results in curing will send you directions, as it may be of some interest to readers of *The Breeder*.

The birds first moped around for a day or so and then a small lump appeared on the eye lid. It soon grew so as to close the eye; in a day the tongue was swollen the size or thickness of a lead pencil and covered with canker, also down the throat and under the tongue, the wattles and comb then came out full of yellow sores and the eyes closed so they could not see to eat. I removed them to a warm place and gave each of them a four grain capsule of powdered rhubarb night and morning the first day, then bathed the head and eyes well with a solution, one teaspoon level full of sulphate of zinc to six ounce bottle of water; also swobbing out the mouth and throat with solution and with a medicine dropper forced some up under the eyelids, this put the canker in shape to pick it off in sheets with a pair of tweezers then rubbed table salt on sore places; the sores on eyelids and wattles were then picked off and touched with a caustic pencil; also rubbing a little glycerine on the eye lids to prevent sticking together. Do this night and morning and in three days they will be able to see. Every night for a week or ten days give an eight grain capsule of sulphur and capsicum equal parts; this soon tones up the system.

If the bird is a good one and worth keeping, and unable to see to eat, get syringe holding a pint and with rubber tube for nozzle. Fill this with bread and milk and force it into the crop, putting the rubber tube below the windpipe.

My birds were in such a condition that I never expected they would live but in a week they were doing nicely and are now well.—*A. F. Herbert, in Michigan Poultry Breeder.*

THE WEIGHT OF EGGS.

The specific gravity of a new-laid egg varies from 1.08 to 1.09; an egg therefore is heavier than seal water, the specific gravity of which is 1.03 When kept, eggs rapidly lose weight and become specifically lighter than water—this is owing to the diminution in bulk of the contents of the egg, the consequence of which is that a portion of the inside of the egg comes to be filled with air.

Prout kept an egg two years and found that it lost weight daily at an average rate of 0.744 grains. The original weight was was 907.5 grains, and after two years exposure to the atmosphere it weighed only 363.2 grains. The total loss amounted to 554.3 grains, or considerably more than half the original weight. The loss in summer was somewhat greater than in winter owing, no doubt to the difference of temperature. When an egg is therefore employed as a test of the strength of the brine, the newer it is the stronger is the brine that floats it.

When an egg is boiled in water it loses weight, particularly if it be removed when boiling and be permitted to cool in the open air. The water will be found to contain a portion of the saline constituents of the egg. The loss of weight from boiling is not constant, varying from twenty to thirty grains, supposing the original weight to have been 1,000 grains.—*Prairie Farmer.*

PICKING GEESE.

In answer to the query, "How often in season ought geese to be picked?" a farmer with fourteen years' experience answers, in the Philadelphia *Farm Journal*, that it depends entirely on the feed and run and explains the whole situation as follows: "They feather out more quickly when they are permitted to run on green pasture and have abundance of good water to drink. Every ten weeks should find them, under such treatment, with a good coat of feathers. Do not pick until laying is over. Geese can not be artificially moulting and producing eggs at the same time. Never pick them in cold weather. When ready to pick, which the experienced geese-raiser can tell by the color of the plumage (if ready there will be no yellowish tinge on the white feathers, but to be sure pick a few from the breast of the goose), the feathers come easily and are dry at the quill end. If not ripe, they are soft and bloody. And this is one of the reasons why store-bought feathers sometimes have such a disagreeable odor, The best guide, experience, tells us to take only a small pinch of feathers in the fingers at a time, and with a quick downward jerk, from tail to neck, displace the first coat of feathers with only a very little of the second coat, the down. Do not pick the bolsters, those large feathers under the wings. If you do, the poor creatures' will droop continually. When the goose dies, we can strip these off for filling pillows for home use. But never take them from the geese while living."

LOW PRICES.

It is an old maxim that hens always lay when eggs are cheap. We may add that they also begin to lay when food is cheap. The matter of price is always viewed from the highest standpoint, yet it is doubtful if there is a greater profit in winter than in summer. During the winter the hens require care and labor, and all of the food must be supplied; but in the summer they pick up insects, seeds, fallen grain, and have all the green food they desire. If a flock of active hens are placed where they can forage over a large area it may safely be said that they will need no food from the hands of their owners at all, and the eggs are almost, if not wholly profit. Then again, a hen will lay two eggs in summer when she may only lay one in winter, and when the proper view is taken of low prices for eggs it may not appear so discouraging as to look at the matter by comparison with winter. It is the profit to be secured, and that depends not on the prices, but on the cost.

BEANS AND PEAS FOR POULTRY.

It has been asked if raw beans are suitable for poultry. Such food is too expensive. Beans and peas are highly nitrogenous, and may be fed raw or cooked, but three times a week is often enough. Much depends upon the prices of such articles compared with the price of eggs. During the winter, when eggs are selling as high as forty cents a dozen, the best food that can be procured is not too costly if the hens are laying. It pays to buy fresh, lean beef, at ten cents a pound, when eggs are twenty-five cents a dozen, as a pound of beef will make a sufficiency for twenty hens.

SHOULD PURE BREEDS BE CROSSED?

It is of no advantage to cross pure breeds. The Leghorn and Plymouth Rock, for instance, each have their peculiarities, and in attempting to blend their qualities, both pure breeds are obliterated unless the crossing is continued judiciously thereafter, During many years' observation of the crossing of pure breeds, the result has usually been that the whole flock dwindled down to nondescripts. The better plan is to keep the breeds pure.

KEROSENE EMULSION.

We are asked to give the method of making the kerosene emulsion. It has frequently been given in this journal, but will be repeated for the benefit of those desiring. Shave half a pound of soap in half a gallon of water, and when the soap is dissolved and the water boiling, remove it from the fire and add half a gallon of kerosene, agitating briskly for ten minutes. A creamy substance results. Add six gallons of water, stirring while so doing, and apply at any time to the poultry house with a sprayer or watering pot.

SELECTING GEESE.

In thinning out the flock of geese, always retain the old birds, as they will often live and breed during the lifetime of a generation. Geese have been known to hatch and raise their young when twenty-five years old. The old geese are not salable in market, and as they are better layers and more careful mothers than the young geese, the latter can be marketed with more advantage and profit than by selling off the old birds.

HOW MR. PIERCE KEEPS GREEN FOOD.

Mr. J. W. Pierce, Peru, Indiana, superintendent of the Miami County Driving Park and Agricultural Society, sends us the following valuable letter, in which he explains how to pack green food in barrels, how much to feed, and its value for producing eggs. We reproduce it from a former issue. He says:

"Many of our poultry friends little consider the value of having their fowls provided with other than that of dry food. This is a grand mistake, for, to my mind, the greatest attention should be given to them during the season when eggs are the highest and fowls are forced to close confinement. My method of winter feeding is to provide food as near like that of summer as possible. Green clover cut up into lengths of three-eights of an inch, and pressed into coal oil barrels, will keep in a good condition until it is fed out, and provides health, and plenty of eggs. Take, for fifty fowls, four barrels, and burn them out. These will cost you twenty-five cents each. Take a building jack-screw, place in the barrel fifty pounds; then press down as tight as possible. Then take a little pulverized charcoal and sprinkle over the clover. Next put in more clover (same length, three-eights of an inch), pressing firmly with jack-screw until the barrel is full, then head up the barrel and roll it out alongside of the poultry house where it will be most exposed to the sun, and cover with a light covering of horse manure, leaving it covered for thirty days, during which time it will pass through the state of fermentation. The barrels should then be moved to a dry room near by the poultry feed room, and along about December 1st open one of the poultryman's silos, and for fifty fowls feed about six pounds, placing the same in a steamer, adding equal parts of corn, oats or bran, bringing the same up to a boiling state.. I will freely guarantee the many readers of the POULTRY KEEPER that this method will please all who give it a thorough test. People living in towns and cities, who do not grow their own clover, can take the barrels into the country, and for one dollar buy enough clover in the field for fifty fowls. I can carry fifty laying hens through the cold winters we have in Indiana just as cheap as I can through the summer, and my eggs, from November 1st until April 1st, will average me twenty cents per dozen. Mr. Editor, we had a call on us about two years ago by a very kind and valuable friend, of whom we have gained many valuable points of information as regards handling poultry. This friend of ours is the greatest fellow we ever saw to *talk out in meetin'*. You just ought to see how very glad wife and the children are to greet his monthly coming. If every poultry breeder in the land would adopt this friend of ours, many would be the sad mistakes they would be able to head off. Long live our dear friend, the POULTRY KEEPER. It comes, as I said before, once each month and scatters sunshine and valuable information along our sometimes discouraged pathway.

Bear in mind, readers, that the secret of success is the *pressure* on the contents of the barrel. A jackscrew is just the thing, but if one is not convenient try heavy stones. We hope other readers will write on the subject also. We extend thanks to Mr. Pierce for his excellent letter.

THE PROPER CHARACTER OF BONE MEAL.

"All bone meal is alike chemically, though not always the same in appearance. As it is the chemical character that counts, the matter of appearance is of no consequence. A cow's milk quality does not depend on her color." This was the remark of an excellent and well-informed gentleman, and in quoting it we do not need to apologize, as in effect it is largely common opinion. Nothing however, can be more erroneous. All bone meal *is not chemically the same*, and *the chemistry depends on the appearance*. An illustration is in point. The Fitch Fertilizer Works, Bay City, Mich., manufactures a granulated bone and a bone meal which are phenomenally dark and greasy. Some other manufacturers put out a white dry meal. The contrast is striking, so far as appearance goes, and in analysis the same is quite true. The ordinary article is really the bone lime and nothing else, the processes of rendering, steaming and bleaching, having robbed the bone of its other constituents. Fitch's is the natural bone, with the attached sinews, muscles, gristle, etc., all ground together. Reason teaches its chemical superiority. Bone lime (ordinary "meal") will, of course, supply hens with material for making egg shells; but Fitch's is constituted to contain also the constituents of white and yolk. Naturally it is bone like Fitch's that is in the highest favor wherever known, and the cause of the favor is self-evident. Their price (five dollars per barrel) places within the reach of all the possibility of approving its superiority.

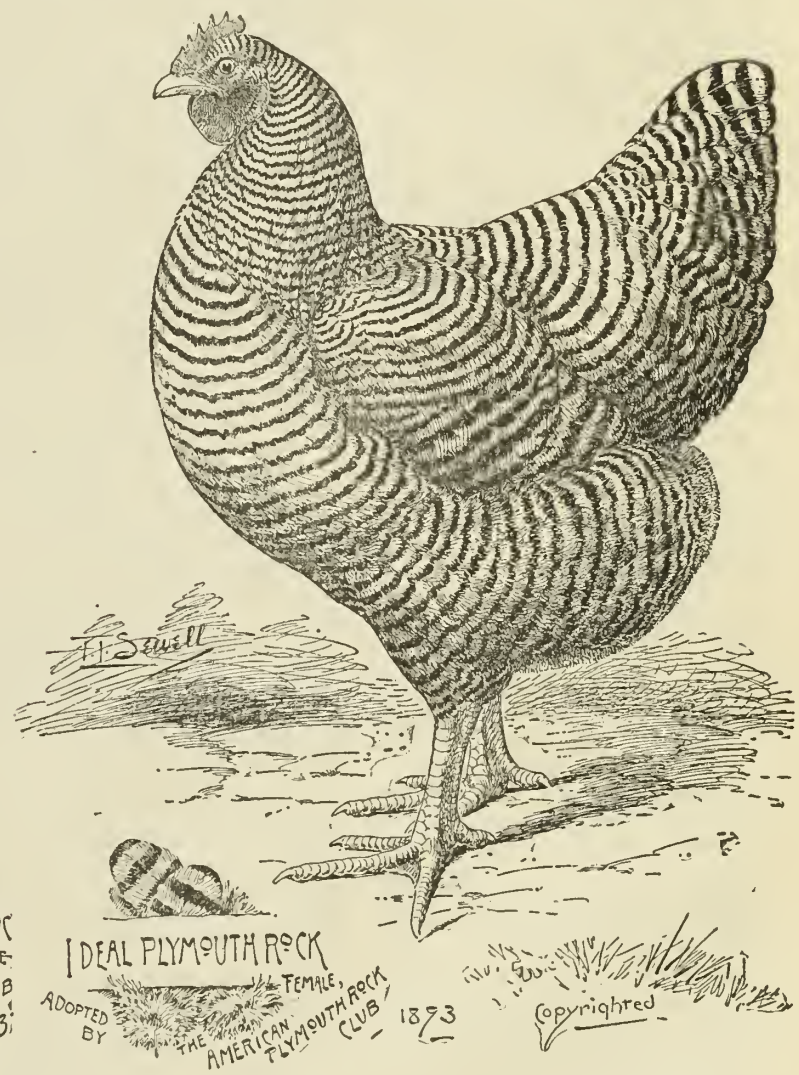
THE AMERICAN PLYMOUTH ROCK CLUB.

The cuts of ideal Barred Plymouth Rocks, male and female, which appear in this issue are fine works of art, and show standard or ideal Plymouth Rocks nearer, probably, than any cuts yet produced. They may be criticised, but in forming a perfect type of shape and barring, we doubt greatly if these cuts can be much improved upon. We trust breeders will study them closely and criticize them, for by so doing Barred Plymouth Rock breeders may know how near the breed is being bred of the same type of shape and color. Mr. Sewell declares they are his masterpieces of this breed.

These cuts are now for sale to members of the club at $2.00 each, and smaller sizes (right for envelopes and letter-heads) at $1.00 each.

By a majority vote of the executive committee, the next meeting of the club will be held in the city of Chicago in October next, on the exposition grounds. All members are earnestly requested to be present, as matters of importance will come before the meeting.

The club intends to offer a list of special prizes, to be competed for at the World's Fair by members only, and requests members and breeders to donate freely for this purpose. In the list of specials, which will be published later, due credit will be given the donors. The club hopes to be able to offer the most valuable string of special prizes ever given on any breed, and can do so if members and friends of the club will come promptly forward and donate liberally. Send money for special prizes and orders for cuts to either the president or secretary.



Breeders, now is the time to join the club! The advantages to you are apparent and the cost is trifling.

The club is growing rapidly, and every Barred Plymouth Rock breeder should become a member. The initiation is $1.00, and annual dues fifty cents. Copy of by-laws and constitution may be obtained upon application to the president or secretary. Mr. Geo. O. Brown, Baltimore, Md., is president, and Mr. E. B. Thompson, Ameuia, N. Y., secretary and treasurer.

GAPES AND COLD STORAGE.

One of our readers at Dixie, Ontario, sends us a few questions which we have no doubt will be valuable to others. He says:

"1. Will chickens that have had the gapes badly when young (full grown now) be likely to carry the germ of this pest with them when they are moved to another farm?

2. Will ducks or geese be likely to carry the gapes to another farm, they having been raised on a place badly infested with this disease?

3. I want to build a cold, dry, well ventilated cellar for cold storage of eggs. Will you please instruct me how to build such a cellar. I want it kept as near freezing as possible. It is to be under a driving house, twenty-five feet square, built of brick, stone foundation. Tell me how to construct the walls, and also the floor. Which is best for the partition—brick, stone or wood? What height should the cellar be, and what proportion of materials to mix for the floor, and should it be plastered? I want an incubator room in one end. Please tell me how to ventilate both rooms properly.

I have been experimenting very carefully in packing eggs, have tried many different methods, and will cheerfully give you the results at some future time, if you think it will interest your readers."

To the first question we will state that we never knew of a grown bird having the gapes. They will sometimes gape from bronchial difficulty, but they do not have gape worms clog the windpipe.

Second, we have never known aquatic birds to have gapes, nor can they carry the gapes from one place to another.

Third, in regard to cold storage of eggs, we will frankly state that we are unable to give the desired information. A mammoth refrigerator would probably answer. Can our readers help on this subject. If so, we will be pleased to have them do so. We will be pleased, also, to receive the results of the experiments promised by our correspondent.

WORMS IN THE INTESTINES.

We have received another letter in regard to worms in the intestines, this time from a lady subscriber living at Humboldt, Kansas. She writes:

"As I was cleaning some young chickens, I discovered some small worms, between two and three inches long, in the intestines, a sample of which I send you. The chickens were in good order, and perfectly healthy as far as I could see. I should like you to tell me what to do for them."

It is difficult to give the cause of worms. That they exist, however, is a fact. Feeding in filthy places, contact, and association under different circumstances, may cause them. The remedy used is to feed a teaspoonful of sulphur, in the soft food of ten hens, one day, and using half a teaspoonful of spirits of turpentine, in place of the sulphur, the next day, for a week or ten days. The worm may do no harm, but it is not pleasant to know that the birds are affected with them.

THE TAG ON A DUCK.

A few weeks since *The Rural New Yorker* gave an account of the Atlantic Duck Farm at Speonk, Long Island. The raising of ducks has been reduced to a perfect science there and upon other farms in the neighborhood. The first stage of the business is successfully done. A good product is turned out. But this product must be well sold to bring the profit that is the object of all the investment of capital, skill, experience and labor. Well grown is half sold, but the other half must be performed all the same. For years the ducks from Mr. Hallock's farm, as well as those from several of his neighbor's farms, have been sold by Mr. Edward DeNoyelles, of West Washington Market, who makes a specialty of this kind of goods.

"How are the Long Island ducks selling now?" I asked Mr. De Noyelles, a few days ago.

"The market is dull just now. The receipts of ducks have been heavy from different parts of the country as well as from Long Island, and many of the people who buy ducks are out of the city, so that the demand is not so heavy as ordinarily."

"Have prices gone lower this season than in former years?"

"Yes, lower than for a number of years at least. They have sold for as low as fourteen cents per pound this year, but are doing a little better now. I don't remember their going below sixteen cents per pound before since the Long Island people have been making such an extensive business of duck raising."

"What is the cause of the depression?"

"The business has been overdone, I think. The supply has increased faster than the demand."

"Are the Long Island ducks superior to those raised in other parts of the country?"

"Some of them are superior to the average run of ducks from other places. Most of the ducks are forced so rapidly in growth that they weigh five or six pounds at eight to ten weeks of age, and make very nice eating."

"Is there a difference, then, between the ducks of different raisers on the island?"

"Yes, there is a great difference."

"What causes the difference: the breed, the feed or the handling?"

"The feed principally. Many of the duck raisers feed their growing stock largely on fish, and this produces an inferior article. Mr. Hallock, of the Atlantic Farm, his brother-in-law, Mr. Wilcox, and others feed no fish to the young ducks and produce a superior article. These people were the first to dispense with fish, and they have a good reputation for their goods."

"How are their ducks distinguished from the others?"

"Every duck is tagged, and these tags have come to have the value of a trademark. One of them on a duck is an assurance that the quality is all right."

One of these tags used by the Atlantic Farm is re-produced thus: "This duck is from the Atlantic Farm, and is absolutely free from fish.—A. J. Hallock, Speonk, L. Island."

"Have you any of these ducks on hand now?"

"Yes, here are a few barrels, and I will open one. You see the top is covered with canvas, and plenty of broken ice is used all through the barrel. They know how to pack stock out there. They always come in first-class condition. You see that every duck has one of these tags."

"About how many do they pack in a barrel?"

"About forty. We get on an average about five barrels a day from the Atlantic Farm, or about 200 ducks, besides large quantities from other raisers?"

"Do they ever ship you any duck eggs?"

"None excepting those from the incubators, which are infertile and are tested out."

"Who buy them?"

"The Italians mostly. They sell for a low price and are not bad eating. The people who buy them think they are a great luxury, and we can hardly supply the demand."

"Is there much of a demand for duck eggs generally?"

"In the spring they are wanted in large quantities, then the demand drops off, and later they sell for little more than hens' eggs."—*Mr. F. H. Valentine, in Rural New Yorker.*

INDIAN GAME CHICKS.

Indian Game chicks may not appear very large, but they nearly always *weigh* heavily. The following letter, from Mr. J. F. Goodson, Concord, N. C., is worthy of attention. He says:

"Last March I bought a setting of Cornish Indian Game eggs, which cost me, including expressage, $9.00. I hatched three chicks, and have succeeded in raising them so far. At three months old, they weigh six pounds. Two are cockerels and one a pullet. One of the cockerels weighs two and a quarter pounds. I am anxious to know how this weight will do for this breed at age mentioned. They are certainly beautiful chicks."

As we understand the above, three chicks, together, weigh six pounds at three months old. It is far above the average, though not extraordinary. We are never surprised to learn of heavy weights of Indian Games

SUBSCRIBE for the POULTRY KEEPER.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

TO THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

MT. HOLLY, N. J., will hold her Fair Sept. 19th to 22d.

CANADIAN money is good. Send it on Canadians and subscribe.

ANOTHER month has rolled by and no poultry paper bought or sold.

READ Mr. Kinney's method for making hens lay. Then get a bone cutter.

BEAR in mind that this is a *poultry* paper for *men*, not a *pet stock* paper for *boys*.

WE can supply any back number for five cents. We also have bound volumes for sale.

SEND two stamps to P. H. Jacobs, Hammonton, N. J., and get plans for an incubator.

MORE incubators were used the past season than ever before. Artificial incubation has come to stay.

WE send this paper six months on trial for only twenty-five cents. Can't you hunt up a quarter in your vest pocket?

COMPARISON and scoring is now "taking a rest" for a brief time. The question is who is fixing the dates of the shows.

THE Fall Fairs are here, and now is the time when the pug dog, the monkey and the white mouse can crow over the rooster.

MR. GEO. E. PEER has made a most excellent Secretary of the A. P. A., and it is to be regretted that under the rules he cannot be again elected.

DR. G. D. JOHNSON is doing some of the thinking for the *Southern Fancier*, and he has had experience enough to make him a teacher in the business.

POULTRY does not seem to worry the Chicago Fair managers very much. They gave the dog men a chance long ago. Even the pigeons stand higher.

WE hope no dates of shows will occur on Christmas week. It is a time when the majority of persons prefer to stay at home instead of going to shows.

THE *Canadian Poultry Review*, published by Mr. H. B. Donovan, Toronto, Ontario, at one dollar per year, is one of the best poultry papers in the Dominion.

UNCLE MIKE BOYER denies the report that mosquitoes are mistaken for broilers on his farm. He says that the broiler is easily distinguished by its shape if not by its size.

THE next A. P. A. meeting (after Chicago) should be held at Baltimore or Richmond, so as to give the breeders near Mason & Dixon's line a chance. But, however, we are rather premature.

WHEN the poultry men can succeed in getting as large a premium at the Fairs as is offered a monkey or jack rabbit they will be fortunate. The difficulty is that as soon as some inexperienced committeeman makes up the list for a Fair the other Fairs copy it.

MESSRS. DREVENSTEDT AND BLUNCK announce that they will publish the *American Fancier*, to be devoted to dogs, poultry and pigeons at Johnstown, N. Y., in September, at $1.50 per year.

THE office of the *Canadian Poultry Journal*, Beeton, Ont., has been destroyed by fire, but the publisher expects to have the paper out again, and asks the indulgence of the readers for a few weeks.

THE Southern Illinois Poultry Association will hold its annual exhibition at Albion, Ill., December 19—22, 1893. Mr. Edward Craig, Albion, Ill., is Secretary, and Mr. C. A. Emry will judge.

MR. LEWIS H. MILLER, West Chester, Pa., will have charge of the dog department at the Fair of the Chester County Agricultural Society at West Chester. He will send catalogues to all desiring.

Davis' "Poultry Talk," published at Atlanta, Ga., forwarded its first number to us, and it proved to be a spicy and well deserving paper. It talks to the point, and is only fifty cents per annum.

TEN day excursion tickets to Chicago, with hours for riding included, will not give much time to attend the A. P. A. meeting if the show is to be seen. The Chicago meeting will be devoid of business. Too much to be seen outside of the meeting.

AMONG the prizes offered at the great Mt. Holly Fair are: best monkey, $2; heaviest turkey, $2; best pug dog, $6; best pair fowls, $3; best pair white mice, gophers, minks, coons, or cats, $1. The pug dog gets there every time.

MR. FELCH, who is opposed to clubs, and whose loyalty to the A. P. A., has heretofore been measured by the hogshead, suddenly organizes a club (spelled a-s-s-o-c-i-a-t-i-o-n), formulates a system of scoring, and advocates clubs. But he has the right to do so and no one should object.

IF any one believes that a silver *dollar* is only worth fifty cents just send it to us. We will take it at 100 cents, and will continue to do so as long as Uncle Sam is willing to accept them for taxes, and we will send you three poultry papers for a (so-called) fifty cent silver dollar.

THE Northwestern Ohio Poultry Company will hold their third annual exhibition on January 10th to 13th, inclusive, at Tiffin, Ohio. Mr. D. L. Biller, of that city, is the Secretary. The poultry interests in that portion of the State are booming, and the Association expects to have the largest show ever held.

IN our last issue we offered, by mistake, the POULTRY KEEPER, *Farm Poultry*, and *Fancier Monthly* for $1.00. It should have been *Fanciers' Review*, as the *Monthly* (published at San Jose, Cal.), though one of the best poultry papers in the country, is sent for $1.00 a year alone.

WE wonder what Bro. Hamilton, of the *New England Fancier*, means when he says that "Judge" ——— is "without doubt" the "most noted breeder" of Dark Brahmas to-day, and how the "Judge" can "mix the feed" for color in Partridge Cochins. Are you not piling on the "puff" pretty thick, brother.

HERE is your rule. Ten hens in a house 10x10 feet, with yard ten times as large as the house. Ten hens with one male, ten chicks with one hen, ten ducks with two drakes, ten cents to raise a chick to two pounds, and ten hens to have one pound of grain a day (with other food). Keep the number in view as a guide. It may not be strictly correct but it is sufficient.

THE *Fanciers Journal* denies that its poultry department is to be reduced. On the contrary it gives more than before, and *better*. It simply changed from a style of poultry literature that interests but few in order to give that which is practical and which will be more highly appreciated. Our former statement was due to a misunderstanding, and we hereby apologize for our mistake. That the *Journal* is better and better, and is filled with reading of the choicest kind in all of its departments, is a fact, however, that cannot be disputed.

WE anxiously await the appointment of the Superintendent of the Poultry Department of the World's Fair. A few politicians have been at work on the job, and it may be that they are still very much alive. Some of the scurriest work in this matter has been engaged in, not so much to secure the best man as to reward chums and friends, and we are patiently awaiting the outcome.

EACH issue of this paper is worth a year's subscription. What is fifty cents compared with the information you get in a year? Do not let your subscription run out, and do not miss a single issue. Just the number you may miss may be the one that would have benefitted you a thousand dollars. It costs you less than five cents a month for the POULTRY KEEPER. Can you afford to try to save so small a sum by dropping the paper.

MR. ALBERT REED, of Hammonton, N. J., marketed 2,000 broilers this season, and is one of the most successful. He has managed for his mother, but as the lady is compelled to sell her plant, Mr. Reed will begin a new plant of his own nearer the railroad. Capt. Crawford has secured the farm of Mr. J. H. Seely, at Hammonton, and a large duck farm will be operated near the lake by Mr. E. S. Grant.

AFTER numerous methods have been given, and hundreds of little chicks had their throats rasped with feathers, and spirits of turpentine had been used by the bottle to cure the gapes, some bright correspondent of the POULTRY KEEPER steps forward and advises that a pinch of fresh insect powder be sprinkled down the throat, and the work is done. It is a sure remedy—do not forget it.

THE sight of 40,000 ducklings is something unusual, yet on the farm of Mr. Wilcox, at Centre Moriches, Long Island, and Mr. Hallock, at Speonk, Long Island, such flocks are not uncommon. Over 80,000 ducklings were hatched in the Prairie State incubators in one neighborhood. Those who desire to learn how to hatch ducklings for market should send us fifty cents for McFettridge's duck book, known as a record of his experience.

THE Anderson County (South Carolina) Poultry Association organized with the following officers: President, J. H. Mounce, Pendleton; first Vice President, B. Harris, Pendleton, second Vice President, P. F. King, Anderson; Secretary and Treasurer, John L. Jolly, Denver, S. C. The President and Secretary ex-officio, with O. A. Bowen, W. T. McGill, and T. B. Lee, Jr., constitute the Executive Committee. They contemplate holding a show at Anderson this fall.

AT the annual meeting of the Cleveland, Ohio, Poultry Association the following officers were elected for the ensuing year: President, Albert Allen; Vice Presidents, Charles Waldeck and Charles Sherwood; Secretary and Treasurer, H. J. Schoof, of Brooklyn; Assistant Secretary, T. P. Fly; Superintendent, A. E. French; Ex. Com., W. H. McMichael, T. P. Fritzinger, F. R. Hunt, Albert Wise and John Ellicott. The date of the next show is December 14th to 20th, inclusive.

WOULD it not be well to have a "chancellor" among us. We are becoming so accustomed to the word "judge" as to make it monotonous. When we read of "Judge Swellhead" we forget that plain "Mr." was ever invented. Now, if we can become acquainted with some "most noble, supreme chancellor" we would begin to feel as if "raising chickens" was a respectable occupation after all. We believe, however, that when one is able to distinguish a yellow leg from a dark one, or black feathers from white, he is entitled to some distinction, and the hope is thus still held out to the rank and file.

ABOUT 900 persons in a 1,000 expect to "supply a hotel" when they go into the poultry and egg business. If the hotels accepted all offers the streets would be blocked for a mile. The fact is that the hotel man, instead of paying the best prices, gives the *lowest*, because he can go on the market and buy in large lots. We might also mention that if there is any money in it the hotel man gives the job to his brother-in-law, wife's cousin, or some other family connection. We have never yet found the man who was "supplying a hotel," but we have heard hundreds suggest how easily it could be done.

MR. GEO. O. BROWN, of Baltimore, writes us as follows, in regard to the meeting of the A. P. A., at Chicago: "Your idea of having the A. P. A. meetings held outside of the World's Fair grounds is a decidedly practical one. There would be no use of trying to hold a meeting inside the ground during the day, and if held at night the fanciers would either have to remain on the ground all the time, or if they went out to the hotel would have to pay fifty cents to get back. When one dollar will go much further outside of the grounds than will two dollars inside, in purchasing "eatables," few people will remain in. I hope that the "leaders" will see the wisdom of your suggestion, and make arrangements with some of the numerous large hotels in the near vicinity of the entrances, so that a parlor could be used for the meeting. Would it not be a good plan to get Mr. Charles McClave, superintendent of water fowls, who is, I think, on the grounds, make arrangements with some large hotel, securing special rates, and have the place as "Fanciers' Headquarters."

A STAGGERER.

Sometimes we receive letters that completely puzzle us, and we are beginning to suppose that some persons have no self-respect or consideration for others. Here is a letter from Vermont:

"I wish to make the poultry business pay, and wish you to give me the full particulars by return mail, I know nothing about poultry but can learn. If you will do so I will not only be under obligations but will subscribe for a six months trial."

There was no stamp for reply, and as the party was too lazy to write his name, giving a *signature* which was as intelligible as an ancient inscription on an Egyptian obelisk, we could not oblige him. The inducement held out to us to write a whole book for his benefit was too weak. He cannot get into the POULTRY KEEPER family through the window, but will have to come in at the door.

JERSEY CATTLE AND TESTS.

Perhaps scoring may be something like the butter records of the Jersey cattle. The *Jersey Bulletin* is filled every week with "tests" of Jersey cows, said tests being made by their *owners* or a *disinterested* (?) committee, and the cows seem to get up anywhere from fourteen to twenty pounds of butter per week, at one time a cow or two getting beyond thirty or forty pounds. It made no difference, so far as these *private* tests, and *club* tests, were concerned, what the figures might be. We would not have been surprised if one hundred pounds per week had been claimed at the rate they were going, but behold, when the Jersey's got to Chicago, and had to stand a *public* test, with the best twenty-five cows in the country there, not one of them could average over two pounds per day, yet the *Bulletin* was giving *private* tests of over two pounds right along. The Jersey's had high pressure at Chicago, and were tested on breed, on feed, and in every possible way, but as the test was not "under the *auspices* of the Jersey Cattle Club," and disinterested persons were *looking* on, no more thirty-pound records could be published. The test at Chicago is sufficient to show that hereafter the so-called reports of tests should be received with "a grain of salt." It is really a sorrowful spectacle to witness such records at Chicago in the face of some of the falsehoods (for that is just what they seem to be) that have been given out in the past as *tests*. The score card system with poultry is about as reliable as the *private* tests, for everything depends on *faith*. No one is obliged to believe the claims that have been made with Jerseys, and especially as the Chicago *public* test places the breed just where it belongs.

WE offer an easy method of learning the banjo, by which the player is taught just where to make the notes of an accompaniment. We also offer an easy method for the guitar, on the same principle. The price of each book is fifty cents, but we offer any one of the books and this paper one year for eighty cents.

MR. A. F. COOPER, of the Prairie State Incubator Co., Homer City, Pa., who recently returned home from a visit to the duck farms on Long Island, states that during his trip he saw not less than 80,000 ducks and ducklings, and that nearly all of the farms are about enlarging their capacity. He received fifty-three orders for his duck incubators while there. Mr. Cooper has just completed a new outdoor brooder which has a regular sled attachment to it, and can be readily pulled to any part of the place, thus enabling one to always keep the chicks on new ground.

POULTRY FOR PROFIT.

This book is No. 1, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the POULTRY KEEPER at sixty cents we will send the book and also the paper for one year.

MANAGEMENT OF YOUNG CHICKS.

This is No. 3 of our series, by P. H. Jacobs, editor of POULTRY KEEPER, and is intended for those interested in raising chicks in large numbers. The price of the book is twenty-five cents, but to those who subscribe to the POULTRY KEEPER for sixty cents we send the paper one year and the book.

BOUND VOLUMES.

We have bound volumes of the POULTRY KEEPER from its start, April 1884, which make a valuable library for poultrymen. Price, $1.00, postpaid, for any one year. 1885-86-87-88 are bound in one volume. Price, $2.50, by express at buyer's expense, or $2.90 by mail postpaid. They are all substantially bound in cloth with gilt stamp on front. Handsome and useful.

THE POULTRY KEEPER SPECIAL.

This is book No. 4—on Diseases. In order however to make it more valuable we have included many other subjects. We will state that we have simply gone back to the old numbers of the POULTRY KEEPER and put "the best of them together," using the plates of special numbers of the POULTRY KEEPER, hence the name of "Poultry Keeper Special." It contains thirty-two pages the size of the POULTRY KEEPER, price twenty-five cents, but for sixty cents we send it and also the POULTRY KEEPER one year. *Poultry Keeper Special for* 1893 is similar to Book No. 4, only the contents entirely different and equally valuable. The terms for it are the same as for No. 4.

BETTER GET OUT.

If a breeder was informed that he did not understand the requirements of the breed he kept he would feel insulted, yet he will send his birds to some show to be scored by a person who never, perhaps, bred a bird of the breed he was scoring. If we could not discover the faults of a bird owned by us without having it shown to us on a score card we would retire from the field, especially as the same bird may not be scored alike by two different parties, or even by the same judge within one hour after the first score. The breeder who does not know his birds has no right to sell them. We know of no *amateurs* to be *educated*. As soon as some procure a trio of birds they get the "swell head," and know too much to be educated. A chicken is a very mysterious (?) thing.

THAT INDIAN GAME CROSS.

In response to several inquiries, we wish to say that, so far, the Indian Game Langshan chicks are doing splendidly, the most of them showing the black feathers of the Langshan. A few of the pullets show considerable red in their feathers. One is a handsome buff color, and another very much of the adopted color of the Golden Wyandotte. All the chicks follow the Game in their long legs and shape of head, and to say the least are very attractive, but several that were dressed did not show the plumpness that was expected. Otherwise, however, they are developing into good table stock, which hardly could be otherwise with such good material to work on. It remains yet to be seen what they will do in the egg yield.—*Associate Editor.*

INDIAN GAMES.—A PUZZLE.

The following postal card came to us, with no return postage, no State, and the name so indistinct that we had to give up the job.

"Mr. Jacobs.—Can you tell me the most reliable person from whom to get Indian Game chickens? If you will send me a postal you will oblige."

The above was from Carlisle (no State), and there are over a dozen Carlisles. He sent no stamp or card for reply, and the name was too much for us to make out. Now, we wish to say that life is too short to *hunt* postoffices, and we cannot afford the time to try and make out *signatures*. Then, again, it looks very *stingy* to write to a man on a postal card, and ask for a reply.

SOMETHING NEW ON MOISTURE.

Does moisture kill the chicks in the shells? The following, sent us as an extract from a paper published in Germany, in 1887, by Mr. August Steinhoff, of Detroit, Mich., and translated for us by Mr. Henry E. Voight, editor of a German poultry paper, Wausau, Wis., will be found very interesting, and explains how moisture prevents air from reaching the chicks in the shells, and how the water fowls cover their eggs. It is one of the most valuable articles we have ever published, and we reproduce it from a former issue, hoping every reader will carefully read it. Here it is:

Among the breeders of Germany it is generally known that birds' eggs have a very fine, glossy, and almost always fissured cuticle, or upper skin, which covers the main shell. On turkey eggs this fine skin can be distinguished very plainly, and, when fresh laid, it can partially be pulled from the egg; but on white eggs, especially with small ones, this fine covering can only be distinguished with the aid of a microscope. Without the latter it would be a hard task to distinguish this covering, and a great deal more concerning the egg. The microscope has not only showed us the fine covering of the egg but it also has aided us in distinguishing the different parts of the shell, and that the latter is covered, also, with very fine pores, which can not be distinguished with the naked eye, and we often find, as in the ostrich egg, that these pores unite in bunches, but are more frequently found alone, as in the eggs of the seagull and a great many other birds. These pores connect with the outer openings, which can be seen with the naked eye on the outside of the larger eggs, but on smaller eggs they can only be seen by the aid of a microscope. On the inside these pores scatter in endless directions among the different shells, to the fibrous skin that covers the albumen, which is also porous, and the space between them are filled with air, which is carried, through the aid of these pores and their connections, into these spaces from the outside of the eggs. Without these pores an egg would be totally deprived of the oxygen, which is so important at the hatching period; it would spoil, and the development of a living object in the inside of the egg would be impossible. In this wonderful mechanism, of supply air, the above mentioned cuticle, or outside covering of the egg has a very important act to perform, and this act is to regulate the air which passes in and out; but perhaps it would be more proper to say that it prevents water, or other dampness to enter. It is so constructed as to terminate a little into the openings at the outside of the pores, and when it becomes moist it will swell to a great extent, which at once closes these pores, and so detains the water from entering into the eggs. The enclosure is thus rendered so tight that now, too, it fully dries out and shrinks this outer covering, so that not even air can pass into the egg, which goes to show that eggs should not be moistened during the hatching period, which tends to make a great many losses, as the developing bird in the egg is thereby deprived of its air, and consequently dies through suffocation. The farm wife in Germany always guards against moisture on eggs, which are under the process of hatching, as they have found through experience that eggs which are moistened generally spoil, and so it has here, as is so often found, been taught by experience, long before science was taught in the right direction.

Now, the question is near whether eggs of the water-birds, that are under the process of hatching, may be moistened without injury? One must confess that the returning bird from the water is not able to entirely dry itself before going on to the nest, but here nature has provided that the eggs from water birds, which can stand no more moisture than other eggs, are not injured from this side. The hatching bird, as is known, does not cover its eggs with the feathers, but with the naked skin of its body, which is bare, and only covered with the down of the thighs, which prevents the air and water from coming in contact with the eggs. The hatching bird always lays these feathers aside, before it sets down upon the eggs, and then rests upon the eggs with its naked body, while the down lays against the sides of the nest and prevents the heat from escaping.

Now, we would like to look at the albumen and the yolk of the egg, from which the young birds develop. Here, too, the microscope has given us some very interesting disclosures. The albumen is not, as seen by the naked eye, an equal mass, but is put together of different parts, some of which are transparent, while others are not, through which opacity is rendered by an abundance of concentrated objects, which can only be distinguished through the aid of the microscope. If an egg is boiled hard, it is easy to separate these concentrated parts, as many of your readers may know. In regard to the yolk, it is only to remember the fine skin that holds it together, a direct oily part lying under the same, and the germ, out of which the heart of the bird is later developed.

A few days after the heat is applied to the egg a thickish substance is formed, by which it is indifferent from what source the heat is obtained, if it only has the right temperature. Not long after, and life begins to show signs, at first slow, then a livelier beating of the heart, the skeleton is formed from the shell, which loses it strength thereby; flesh and blood and all the inner organs develop under our eyes, out of the albumen and the yolk, and a few days before coming out, you can hear the young birds peep, at least by our fowls and a great many other birds, which shows us that at least so much of the atmosphere has entered to fully develop the lungs. The young bird gets uneasy, and soon gains so much strength that it can break the shell with its bill, by which a small sharp bunch on the bill assists it, but which is later lost therefrom.

The above shows how the shell affects the entrance of air, and how the application of moisture may do more harm than good, yet there are those who seem to suppose that moisture is essential at all stages. As we stated, however, let every one read the above.

NEW BREEDS AND UTILITY.

The American people always welcome new breeds that are produced, and give them all the opportunities to establish themselves, but it is a remarkable fact that offshoots, or "sports" as they are designated, seldom secure a place in the preferences of the people. While the pea-comb was, and is now, considered one of the most desirable characteristics of the Brahmas, the attempt to create a pea-comb Partridge Cochin was an utter failure. For years there has been a pea-comb Plymouth Rock, but its admirers can be counted on the fingers, and it is rare that such a breed is seen in the show room. It was with a great flourish that an enterprising breeder introduced the rose-comb Leghorn, which was to shove the old and well-known single-comb variety aside, but to-day there will be found a hundred single-comb Leghorns where only one rose-comb is noticed. It has been plainly demonstrated that the shape of the comb will not give any breed the preference.

Color of plumage also has been changed to suit the requirements. Breeders supposed that a white color would be accepted in preference to all others, but the barred Plymouth Rock and the Silver Wyandotte are still ahead of the white varieties and it is doubtful if even the old and reliable White Leghorn can muster as large a force as the Browns, while White Cochins, White Javas, and White Minorcas are even outranked by the same breeds of the black varieties. The attempt to introduce a White Langshan variety is a complete failure compared with the popularity of the Black Langshans, while mottled breeds are always under the suspicion of being crosses.

The only characteristic that seems to influence popularity is the yellow color of the legs. True, the dark legs are not admired, but the breeds with dark legs are superior to those possessing yellow legs for the table, and as custom has given the preference to the yellow legs, breeds so favored will have an advantage. The people are disposed to test a new breed, but not a new variety of a breed. The majority care very little for the color of plumage or shape of the comb, but they are very partial to any breed or variety that has a record for egg production.

EXPERIENCE AND POULTRY.

Experience is a very important matter in managing a large flock, and for that reason no one should venture to put a great amount of capital in the poultry business unless he has had an experience sufficient to enable him to manage in a manner to avoid as many mistakes as possible.

A great many inexperienced persons, who have, however, accustomed themselves to the reading of literature devoted to poultry, are prone to look on the bright side always, and they usually expect, at some day, to embark in the business of keeping poultry in large numbers, in order to rid themselves of some disagreeable employment in which they are engaged. Such persons also expect to work with a limited capital, and do not realize that there is no business in which they can engage which will be successful without sufficient capital, though they really expect more from poultry than from any other business enterprise.

It is impossible to make any business pay, no matter how much capital and labor may be used for the purpose, unless the person who is engaged knows how to use his capital and labor properly. Experience is more important than capital, and it is essential in any business outside of that of poultry. The poultryman must combat all the diseases to which poultry may be subject, and these diseases may be forced upon him by some careless neighbor, or by the simple neglect of some essential matter in itself apparently trivial. It is the little details upon which success depends, and the attention to all details depends on the experience and skill of the poultryman.

The above is more in reply to those who have inquired in regard to abandoning their positions in order to engage in keeping poultry than to other classes of readers, yet experience is often needed on the farm. The farmer who has raised only the scrub fowls, and allowed them no place but the trees, has had but a limited experience, though there is a class that is willing to improve, but which must begin at the bottom and work up.

FRESH AIR MISTAKES.

One of the problems that cause the poultryman to ponder for a solution, is that of providing fresh air. If a large number of them would consider the matter of how not to have it, there would be a smaller loss from cold and disease. A writer who had lost nearly all his little chicks desired to know if they had air enough, although his poultry house was about 10x16 feet, and "ventilated" the greater portion of the day. Now, would any parent subject a baby to such exposure? Is it possible to prevent the fresh air from coming in despite all efforts to keep it out, especially as there is an atmospheric pressure of fifteen pounds to the square inch? A gentleman six feet tall recently entered our brooder house, and his first remark was "It's very warm in here; why don't you give some fresh air? The only place for it to enter is the egress holes by which the chicks go outside." When we explained to him that the egress holes were six inches square, and consequently four times (or more) as large as the chicks, and equivalent to a door twenty-four feet high and the same wide, for a man, compared with the egress holes for the chicks, he at once saw that the little holes would not give a man too much air, but they were large compared to the size of the chick, and that though the house was very warm to him it was different with the little chicks down on the ground. The mistake mostly made is in regulating the warmth and ventilation to suit your condition instead of that of the occupants of the poultry house. It is the same with brooders. The fresh air advocates overdo the ventilation work. They let out the pure warm air and let in the pure cold air. In a space like a brooder house it is almost impossible to avoid ventilation. The object should be to always keep the fowls and chicks warm, and let the ventilation and fresh air take care of themselves.

EARLY CHICKS FOR MARKET.

November will not be too soon to begin operations for hatching the early broilers. It requires three weeks for incubation, which will bring the hatch down to about December, and ten weeks more will be required for the growth of the chicks, thus getting them into market in March. All the operations for hatching should therefore be completed before January, if early broilers are to be a specialty. As one can easily calculate the number of weeks required for hatching and raising the chicks, the importance of beginning early cannot be too strongly urged. It is an excellent rule to allow three months from the time the eggs are put into the incubator until the chicks go to market, when they should then weigh about one and one-half pounds each.

Early chicks in large numbers will be an impossibility with the use of hens, as the hens are too uncertain, and may not begin to set before spring. If the broiler business is to be conducted with a view of securing a profit, the hatching must be done with incubators, in order to have such work under control. With an incubator one can hatch out chicks at any time and in as large numbers as may be desired, while the hen is at times useless. There are drawbacks and advantages with incubators, and the same applies to hens. In the winter one has more time to devote to hatching, and may profitably employ time that would otherwise be lost.

Quick growth and the heaviest weight in the shortest time are matters of importance in raising broilers, and the use of pure-bred males will add much to the value of chicks. It is not necessary to discard the hens because they are mongrels, or cross-bred, but it is very important that no mongrel males be used. The Wyandotte, Plymouth Rock, Langshan or Brahma males will show a wonderful improvement in the size and quality of the chicks; and as a single male may sire a thousand chicks in less than a year, the use of mongrel males is not economical, the addition of one-fourth of a cent to the value of each chick being more than the value of the sire if he has sired several hundred chicks. In the face of this fact it is unwise to an extreme to omit the pure-bred males.

If incubators are to be used, it is not too soon to begin. Much can be learned with a trial hatch, and now is the time to experiment. The greatest drawback is that of procuring the eggs. There may be plenty of eggs to be procured, but all eggs are not suitable for incubation, as the hens may be too fat, the males impotent, or the eggs from immature pullets. No eggs except those of normal size should be used. Large eggs, small eggs, rough eggs or misshapen eggs should be discarded. It is best to have your own hens from which to secure eggs, but if this cannot be done, and eggs must be purchased, let it be from flocks that are known to you. Any attempt to hatch chicks from eggs procured promiscuously, from all sources, will fail to give satisfactory results, no matter how well the management may be otherwise.

HARBORING RATS.

The cat is the only remedy for the rat, but there should be no *pet* cats. The only useful cat is the one that is raised at the barn or stable, and which receives no food at the house. The cat must also be regarded as a depredator and destroyer of chicks. She may be a necessary evil, and must be treated as such, by protecting the chicks. Even the pet cat will catch and eat young chicks, but the pet cat will not keep down the rats, as she is not compelled to depend on her own exertions for food. A cat that is forced to hunt rats becomes a terror to them, as she is always on the alert, and though she will occasionally secure a chick, yet she will not do one-tenth the damage that will result from even a pair of rats. A cat should not have any acquaintances among the farmer's family. No one should injure her, or treat her unkindly, but no familiarity with her should be allowed, and not a morsel of food should be given her. From the time she is weaned as a kitten until she is fully matured, she must be kept at the barn or stable. If the rats and mice disappear, she may be allowed a little meat occasionally, but not as long as a rat remains must she be favored.

PURE-BRED STOCK AND FARMERS.

While it is true that some common fowls that are native to the climate are hardy, and thrive better than perhaps some pure breeds may, yet the observation of the farmer will convince him, after due time, that the greatest profit is from the pure-bred stock, provided he will learn the characteristics of the breeds. It is just as much the duty of the farmer to know all about the different breeds as it is to know how to plow and cultivate. It would surprise any farmer if his family physician should inform him that he could not distinguish one disease from another; yet there are thousands of farmers who cannot go into a herd or a flock and distinguish the different breeds. Are such farmers really farmers? Have they completely "learned their trade?"

What is common stock? It is said that there are a great many pure breeds. There are more different kinds of common fowls than there are of pure breeds. There is at least some uniformity in a pure breed. One hundred Leghorns, or Plymouth Rocks, or other breeds, will be so nearly alike that the farmer will be unable to note any difference, but it is seldom that two common fowls are alike. All common fowls are not just alike in characteristics. One flock may contain some excellent layers, while another flock may be worthless. If a good flock is found, it is often the case that it is the result of indiscriminate crossing from some pure-bred fowls, and the common stock has repeatedly been praised for excellence when the credit really belongs to pure breeds.

Those who ridicule the enterprising farmer for expending an extra sum for pure bred males never fail to come around at some time and request to "change eggs." They might as well, with equal propriety, ask to exchange a mongrel calf for a Jersey; but they know that a kind neighbor will oblige them with the eggs rather than break friendship, and they take advantage of his enterprise. It pays to buy pure-bred stock, however, even when one has to change eggs with those who do not encourage pure breeds.

CHEAP LANDS FOR POULTRY.

There are thousands of acres of unproductive land which can be used for poultry with advantage. On nearly all farms may be noticed certain portions of brush land, or wood land, that could be utilized for poultry at a small outlay. In some sections of New Jersey, near the sea coast, the barren sand heaps have been found quite valuable as locations for poultry, not that any kind of green food, or insects, are obtained, but because such lands are dry. Gapes, cholera and many other diseases are unknown on the sandy lands so used, which advantages balance any deficiency in any other direction. The main advantage, however, is that the raising of poultry permits of rendering serviceable the sandy tracts that could not be used for any other purposes whatever.

There is another class of unprofitable lands which are really better than any other. They are the brush lands from which timber has been cut, and which are abandoned to second growth and to brush. Such locations provide fowls with insects and green food in abundance, and if provision is made for protecting the poultry at night against minks and other enemies, but little loss will result. We know of several such tracts upon which large flocks are kept, and the expense is almost nothing. The hens are fed once a day, not from any necessity to provide them with food, but to keep them tame, and to have them answer to some familiar call by running forward when their owner appears. There is some loss, but the eggs and poultry secured are almost wholly profit.

MEAT A NECESSITY.

Meat is a necessity when the food is lacking in albuminoids, for the production of eggs calls for a supply of certain substances that are more concentrated in meat than in any other food. Birds are carnivorous, garnivorous and omnivorous, the first feeding on meat, the second on grains and the third on both meat and grains. These foods are not used exclusively, for grass enters into the list, and a carnivorous or garnivorous bird will sometimes accept foods belonging to the other class. The grain-eating birds have their food prepared in the gizzard, but the carnivorous birds are capable of tearing their food to pieces, the gizzards, however, assisting; but their gizzards are thin, while those of the grain-eating birds are very strong and thick.

Our domestic fowls are really creatures of circumstances, being what man has made them by selection and breeding. They belong really to the granivorous class, but man has made them capable of utilizing all kinds of food. In the wild state the fowls lay but few eggs in a season and cease, and they readily find any proportion of animal food required, in the shape of insects, especially in spring and summer, but the domestic hen is expected to lay at seasons when insects, seeds and grass cannot be had.

If meat is fed it soon returns its cost by increasing the number of eggs layed. It will not suffice to feed fat meat, for such is just the opposite of that which should be used. Meat should be lean, as only the lean contains the nitrogen, which is one of the main constituents of eggs. Meat is not expensive if the coarser kinds are used; and if only fed twice a week it will be of some advantage. There are those who use milk as a substitute, but it must not be overlooked that the hen is not capable of drinking enough milk in quantity to supply the place of meat.

FORAGING AND EGGS.

There is no method of feeding that will give as good results as allowing the hens to forage, for by so doing they not only keep in good condition, due to daily exercise, but they also secure a large share of their food, and of a more varied character. Hens on the range lay more eggs than when confined, and the young chicks that are hatched early, and which are permitted to have the privilege of foraging, grow rapidly and become ready for market in a short time.

There is always the cost to be considered, however, whether the fowls are on a range or confined. It may not pay to devote a large field entirely to a flock of hens, as the use of the land is an item that enters into the cost. On the stubble-fields, or upon land that will be unoccupied by a crop, or by other stock, the hens will give a profit simply because the land would otherwise be idle. The best method is to give the hens the use of an orchard, as they will then only occupy a field already in service.

It will pay, however, to devote a special plot to poultry if the flock is large. One acre will not support a good cow unless with the best of management; but one acre will support fifty hens, and at less cost for extra feed than for a cow, and the profit, if the flock is well cared for, will be greater than from one cow. Looking at the matter from that stand point it is safe to claim that it is as profitable to use land as a pasture for fowls as for cows.

All the drawbacks that may be ascribed to poultry raising are also liable with the cow. If the hens are disposed to cease laying for awhile, so will the cow become dry and remain unprofitable for a portion of the year. If the hen occasionally misses a few days in producing eggs, so will the cow often shrink in her milk and lessen the supply. Eggs may be cheap in some sections and appear unprofitable; but the prices do not vary as much for eggs as for milk, as we have known milk to sell for ten cents a gallon in one place, while bringing thirty cents elsewhere.

THE GAPES—HOW TO CURE.

When a large number of chicks have gapes it is a difficult task to handle each one separately so as to force a feather tip, or horse hair, into the windpipe in order to pull out the thread-like gape worms, though such is the usal practice, as cures are not always reliable without physical aid. The best remedy is to give each chick a drop of spirits of turpentine on a bread crumb. If the chicks are numerous, mix a teaspoonful of spirits turpentine with a quart of cornmeal, make into a stiff dough and feed it to the chicks. A wholesale method of curing gapes is to put the chicks in a box with a wire partition; on one side of the partition the chicks are to be placed, and on the other side of the wire a hot brick or stone. Pour a little carbolic acid on the hot brick, shut the lid of the box and compel the chicks to breathe the fumes of the carbolic acid. It will cure the gapes at once, but care must be taken not to suffocate the chicks. This remedy is also excellent for roup, or where adult fowls are suffocating with the well-known difficult breathing. Once or twice at practice will enable you to handle the chicks just as it should be. To prevent gapes, keep the chicks on clean, board floors.

HARDINESS.

So many readers ask us which breed lays the most eggs, and which is the best for the table. It is, perhaps, not difficult to select some breeds that will lay more eggs in a year than others, but there is something more important to be considered in the matter than excelling in laying. The most essential requisite in a breed is hardiness. It is useless to attempt to secure good results from any breed unless it can endure the climate to which it is transferred, and the liability to contract diseases exists more in some breeds than in others. It is impossible to secure all that is desirable in a single breed, but if there is one good quality that should never be sacrificed for any consideration, it is hardiness. If a breed is not hardy it will fail either in winter or summer, and should disease appear, the whole flock may be carried off. In raising chicks aim to use hens that have always been healthy, and select males that are strong, active and vigorous, and by so doing each year, the flock will be stronger and hardier.

A POINT ON WHEN TO SELL.

One class of our citizens, the Hebrews, buy largely at certain times. Many poultry retailers are among them, and their religious rules and regulations have much to do with fixing the market prices in the large cities. They usually have about thirty-five various feast and fast days in a year, requiring about forty-eight days of celebration. They usually have certain dates, which can be obtained from the "Jewish calendar" of the almanacs published (nearly all almanacs contain the feast days), and it will pay to know when these days occur. The consumption of poultry at some of these feasts is a great feature, and as their regulations require that all poultry be killed by a church official, they buy only live fowls. They are the largest purchasers of geese and ducks, and are willing to pay good prices for choice birds. It may also be stated here that if those who sell poultry will make themselves familiar with all holidays and with all sects, it will be an advantage in knowing the best periods for shipping.

CHOLERA REMEDIES.

We have received quite a number of cholera remedies from our readers, but, as the wag said, the "best way to cure cholera is not to have it in the flock." To avoid cholera, spade your yards up at least once a month, keep the interior of the house clean and also cool. The water for drinking must be fresh, and no food should be allowed to remain on the ground to decay and ferment. Above all, bring no strange fowl into your flock, as it may have the germs of disease. Should cholera appear separate the sick fowls from the others, disinfect, feed on boiled rice, to which a teaspoonful of carbolic acid has been added for every gallon of boiled rice, and give no drinking water except that prepared by adding a teaspoonful of carbolic acid to every half gallon of drinking water. Cease all medicines as soon as the birds improve.

WHEAT CHAFF.

No better use can be made of wheat chaff than to use it as litter in the poultry-houses on the floors, as litter, in which the hens can scratch and exercise. It should be stored away in a dry place for winter. If a gill of millet seed be scattered in the chaff the hens will work and hunt for the small seeds industriously until every one is found, and as the seeds are so very small, the hens will be more earnest and diligent, the seeds also being somewhat of a luxury. The chaff will also assist in keeping the floor dry, thus adding to the warmth and comfort of the poultry-house during periods of cold or damp weather.

THE COMFORT POULTRY-HOUSE.

The illustration, styled the "Comfort Poultry-house" by the designer, Captain Phillips, of Chicago, and the general outline is made plain in the cut. It keeps the fowls warm in winter and provides ample room for exercise, giving plenty of floor space. The house is six and one-half feet at the back, six feet at the bend of the roof, two and one-half feet at the beginning of the covered run, and one foot at the front end of the covered run. The house proper is 8x10 feet, and the covered run is also 8x10 feet, giving a total space of 8x20 feet. In the illustration, A is the door, opening into a passageway, B and C is a door from the passageway into the room, D showing the partition. E is the roost, and F is a drop-board under the roost, the nest being shown at G. A run under the floor is shown at H, the steps from the run to the floor above being shown at K. Ventilators are SS, and T is a small door leading outside The covered run has a hinged door, which can be raised or lowered as desired, The roof may be of tarred felt, or any suitable roofing material, and the lights in the windows of the covered run may be of oiled muslin or glass. It is a very snug and convenient poultry-house, giving plenty of room for roosting and exercise.

DUCK BREEDING.

F. H. Valentine, of the *Rural New Yorker* recently had an interview with Mr. A. J. Hallock the extensive duck breeder of Speonk, N. Y., of whose place and stock mention has heretofore been made in these columns. We reproduce a portion of the talk:

"How long have you been in the duck business, Mr. Hallock?"

"My father started in a small way, about thirty-five years ago. He kept only a few ducks as a sort of experiment, using hens, of course, to do the hatching. The business has been growing ever since until it has attained its present proportions."

"How many breeders do you keep?"

"We started the season with 1,000, but have about 800 now. Some of the layers break down, some are injured by the drakes so we kill them off."

"How many ducks do you allow to each drake?"

"The number varies. At first we allow seven or eight; later, when the weather grows warmer, more are given, until sometimes we have as many as twelve with one drake."

"Do you keep each drake and his family separate, or allow several together in one pen?"

"We have as many as thirty-five or forty together. It isn't necessary to keep all males separate as it is with fowls."

"What breeds are your ducks?"

"All Pekins. They are the best for our purpose."

"What strains do you keep?"

"No particular strain. We want the best, regardless of the strain."

"How do you select your breeders: from the earliest hatch or from those hatched late in the season?"

"Neither. We select the strongest, most vigorous specimens from all of the yards. Those which have made a more vigorous, larger growth than the rest of the flock of the same age are best suited to our purposes. Having about 20,000 young birds to select from, we are able to get a fine lot of breeders."

"Do you inbreed?"

"No more than we can help; but just there is where we have a great deal of trouble. We have exchanged with other breeders until it is impossible to find a flock not related. We have to go a good ways from home now to get new blood."

"What is the average weight of your breeders?"

"Probably close to twelve pounds. Some of the heaviest will weigh more than that."

"How early do you begin hatching?"

"Just as soon as the ducks begin laying eggs that will hatch. We are a month behind this year on account of the severe winter. My neighbor, Mr. Wilcox, got the start of me this year, and his buildings are more protected than mine and therefore are warmer. It takes a warm house to get early eggs."

"Do all of your breeders have access to the water?"

"Yes, every yard extends into the river."

"Do you consider water a necessity, except for drinking purposes?"

"No, for some of the duck farmers do not have water, and they appear to raise just as large ducks as we do with water."

"Of what advantage is it then?"

"The ducks are cleaner. They look better, of course; and then it isn't necessary to wash them when we are killing them. The feathers must be clean when they are picked or they cannot be sold, and the ducks can do this work better than we can. Fewer drakes are required, too, when the ducks have water. Altogether, it seems the more natural way, and the ducks are much more contented and would naturally be expected to thrive better."

"Do you let your young stock run to the water?"

"Yes, after they get old enough to stir around lively. Of course the weather makes some difference. If the weather is cold, they musn't be allowed in the water so soon."

"Is the water in the rivers fresh?"

"Yes; it comes from springs. In very high tides it may be a little salt."

"Do you keep your old stock confined all the time?"

"No; I let them out late in the season and they go off down to the bay about a half mile."

"Do you ever lose any by their straying away?"

"No, they always come back."

"Until what age do you keep the breeders?"

"Three or four years. I have some five years old, but I shan't keep them any longer. They don't lay so well when they get so old. The eggs hatch better, however, from old than from young ducks."

"Do you have any trouble from the ducks laying in the water outside?"

"No; they always come into the house to lay, but we generally keep them shut in during the night, and they lay before going out"

"Do you pick your breeders?"

"No; not until we get through with them and kill them."

"Are any of your houses floored?"

"No; only with the sandy soil, which makes an excellent floor. We cut a great deal of salt hay on the meadows, and use this for bedding in the houses, and under the brooders."

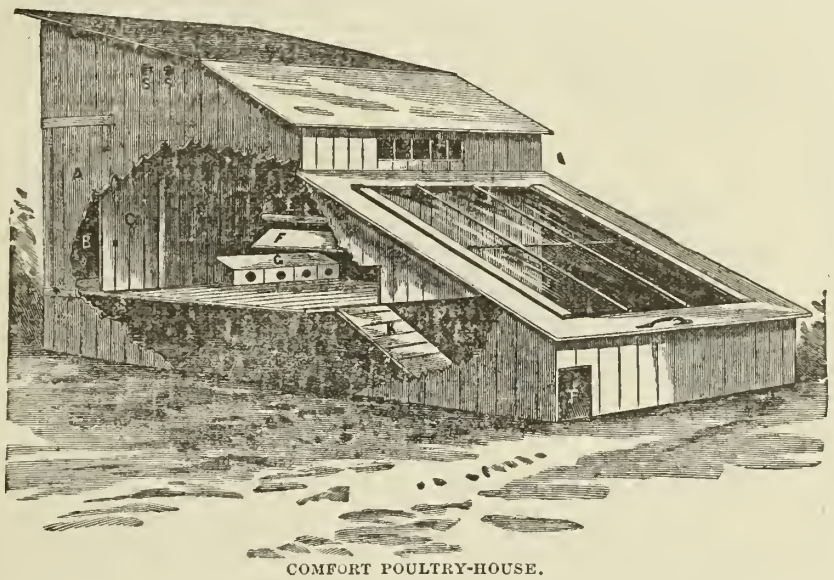
"How many eggs will your ducks average per year?"

"One hundred and thirty-five."

"Do you hatch them all in your own incubators?"

"Oh, no; we couldn't with our present capacity, and we couldn't take care of the ducks if we could. Large numbers are shipped. We fill our own incubators first, but we make a specialty of furnishing eggs for hatching, and ship a great many."

"Do you find ready sales for your surplus?"



COMFORT POULTRY-HOUSE.

"Yes; We haven't been able to fill the orders this year. I have returned about as much money as I have kept."

"Do you guarantee that the eggs you sell will hatch well?"

"Not much. I don't guarantee that any of them will hatch. I guarantee their fertility, and their safe arrival, but that is as far as I can go. My eggs are remarkably fertile, and, as I am hatching thousands of them every month myself, I can always tell just how they ought to hatch."

"What prices do you get for incubator eggs?"

"Seven dollars per 100, or $60 per 1,000 packed and delivered at the station."

"What do you feed principally to the breeding stock?"

"Corn meal and bran or No. 2 flour, about equal parts, perhaps a little more than half of the mixture meal, wheat, buckwheat etc., mixed up with water. We also feed vegetables and green stuff when we have them. We can't get vegetables enough, all we raised last year were gone before spring."

"At what weight, or age do you kill?"

"When they weigh about five pounds dressed. They reach this weight, and some of them will weigh five and one-half, five and three-quarters, or even six pounds at eight to ten weeks old. We are now killing some that are only seven weeks old, and they will now weigh five pounds. We are killing them a little younger because the price is high now, but likely to decline soon so we want to get all we can at the high prices."

"How many young ducks do you raise annually?"

"About 20,000. We now have out about 8,300, but we started a month late and the ducks ought to lay later than usual." Ten days later Mr. Hallock wrote me that he then had out over 10,000.

TOO MUCH ROOSTER.

Occasionally we hear of complaints of eggs failing to hatch when the person owns but a single trio of fowls, has them yarded, and in perfect health. Recently such a complaint was sent to one of the leading eastern agricultural papers, where the trio consisted of Brown Leghorns, the most active of breeds. It was answered by a lengthy dissertation upon various causes of infertility of eggs, but the real cause, which is the title of this communication, was not mentioned. The fact seems to be unknown by many people that in breeding fowls there is danger of having too few as well as of having too many hens with a single male bird.

Years ago, when this writer was breeding White Leghorns, he found that it would not do to keep too small a number of hens with a cock. When the eggs proved infertile the addition of a few more hens speedily corrected the trouble.

But what is one to do who has but a trio and the eggs prove infertile? Oftentimes the eggs from the hens of a trio hatch excellently and then nothing requires to be done But when one has but a trio and the eggs are infertile from the too constant attention of the male, the remedy is simple. It is only necessary to remove him from the pen and admit him for a half hour or hour each day. This can be done with the least labor by letting him associate with the hens just before roosting time. Then, when he has gone to roost with them he can be easily taken from the perch and put into his separate coop.

Where one has a trio of thoroughbred fowls and a number of common hens, he can add to the trio enough common hens to insure the fertility of the flock, and by noticing the character of the eggs laid by his thoroughbreds he can select the latter for hatching. If the eggs laid by the thoroughbreds are different in color from those laid by the other hens, the selection is the more easily made. For example, if one has a trio of Leghorns which lay pure white eggs and a mixed lot of other hens that lay colored eggs, the Leghorn eggs are easily selected; or if one had a trio of Light Brahmas, which lay dark eggs, he could add a number of hens laying white eggs and so secure with ease the Brahma eggs. But even when the thoroughbred and mongrel hens lay eggs of the same color, a little observation will enable one to select the eggs of the thoroughbred hens with very slight chances of making any error. Eggs have a character and individuality, and it is not difficult for an ordinarily careful observer to learn to distinguish the eggs of each hen in a small flock. I used to be able to distinguish the eggs laid by my Leghorn hens, and no breed lays more uniform eggs than the Leghorn. In color they are almost always identical, but in shape there are slight but sufficient differences by which they may be distinguished. Colored eggs are much more easily distinguished, as there is usually a difference in shade as well as a difference in color. At any rate the problem is not very difficult of solution.—*H. S. Babcock, in Western Garden.*

BRAN AND OATS IN SUMMER.

With grass plentiful at this season, it is best to allow but one meal daily, and the meal should be given late in the day—just before the hens go on the roost. The bran and oats (which should be ground) will supply all that is necessary for the production of eggs, if a small allowance of meat is made. A pound of lean meat, chopped fine and cooked to a soup in two quarts of water the broth to be thickened to the consistency of a stiff dough, with the bran and oats, to be fed cold, will be sufficient for a large flock. The hens should be allowed to eat all that they desire; but as they will come up at night with crops nearly full they will not eat more than a small proportion. The soft food diet is not the best, for fowls thrive better on hard food, but by this method the hens can be given food that will be of advantage to them when they have a range. Give no meals in the morning or at noon, the object being to compel the hens to go forth with empty crops and seek their food, the exercise of so doing being a great inducement to produce eggs. It is very easy to make hens too fat after the weather becomes warmer, and the best remedy to avoid disease and a surplus of fat is exercise.

A CHICK'S DEVELOPMENT.

A French scientist, who removed the shell on either side of the egg, without injuring the membrane, in patches about the size of a pea, and snugly fitted the openings with bits of glass, gives the following report of the wonderful experiment: "I placed the egg with the glass bull's-eye in an incubator run by clock work and revolving once each hour, so that I had the pleasure of looking through and watching the change upon the inside at the end of each sixty minutes. No changes were noticeable until after the end of the twelfth hour, when some of the lineaments of the head and body of the chick made their appearance. The heart appeared to beat at the end of the twenty-fourth hour, and in forty-eight hours two vessels of blood were distinguished, the pulsations being quite visible. At the fiftieth hour an auricle of the heart appeared, much resembling a lace or noose folded down upon itself. At the end of several hours we distinguished wings and two bubbles for the brain, one for the bill and two others for the forepart and hindpart of the head. The liver appeared at the end of the fifth day. At the end of 131 hours the first voluntary motion was observed. At the end of 138 hours the lungs and stomach had become visible, and four hours later the intestines, the loins and the upper mandible could be distinguished. The slimy matter of the brain began to take form and become more compact at the beginning of the seventh day. At the 190th hour the bill first opened, and flesh began to appear on the breast. At the 194th the sternum appeared. At the 210th the ribs began to put from the back; the bill was quite visible, as was also the gall bladder. At the beginning of the 236th hour the bill had become green, and it was evident the chick could have moved had it been taken from the shell. Four hours more and feathers had commenced to shoot out and the skull to become gristly. At the 264th hour the eyes appeared, and two hours later the ribs were perfect. At the 331st hour the spleen drew up to the stomach, and the lungs to the chest. When the incubator had turned the egg 335 times, the bill was frequently opening and closing, as if the chick were gasping for breath. When 351 hours had elapsed we heard the first cry of the little biped. From that time forward he grew rapidly, and came out a full-fledged chick at the proper time."

SOMETHING ABOUT EGGS.

Authorities on scientific cooking tell us many things that are well worth remembering. A writer in *Food* tells us something about eggs. Eggs should never be cooked before they are twenty-four hours old, and they are much better if kept forty-eight hours or until their whites are set. The white in a freshly-laid egg cannot be beaten stiff until it has laid on ice for some time. The old way of testing eggs—that of putting them in water—is one of the best. If they are fresh enough for cooking they will sink. On the contrary, if the eggs rise to the surface, air enough has penetrated the shell to make the egg unfit for use, although its yolk may look perfect and no odor can be detected. Decomposition begins when the contents of the shell are exposed to the external air, and the fact of the egg floating in water is proof positive that it has been lightened by air. The digestibility of the hard-boiled egg is a favorite theme. Eggs should never be actually boiled, as the extremely high temperature of the water hardens and toughens the whites at once, rendering them indigestible. If they are submerged in water just below the boiling point and kept at that temperature for one half hour they will be almost as digestible as raw eggs.

A good rule to cook eggs for invalids is to pour boiling water in a tin pail having a tight cover; put the eggs in the pail, carefully, cover it tightly and let it stand entirely away from the fire for five minutes. The whites of the eggs cooked in this manner will be perfectly coagulated, soft, tender and easily assimilated.

WINDOWS OF A POULTRY HOUSE.

A large window admits more heat and light during the day, but it radiates the heat rapidly at night. One of the most essential requirements in a poultry house is light, as the hens will abandon a darkened house during the daytime, no matter how warm it is. Instead of using very large windows, there should be small windows, on at least two sides (or in front and at the ends), so as to render the house light and cheerful in every part. Another advantage of using a number of small windows is that they are cheaper than large ones, and the cost is increased but little. They also admit the sunlight from all quarters during the whole of the day, and aid in more rapidly drying the floor, should it be damp.

OVERFEEDING LAYING HENS.

Bear in mind that if you attempt to fatten some of the hens for market you must remove those intended to be retained as layers, or the laying hens will become so fat that they will become useless. More loss occurs from overfeeding than from insufficient food, and the result is due to a failure to recognize the fact that a laying hen requires different food from one intended for market.

SUMMER WATER-TROUGH.

It is better to give water to the hens in a large trough, in the summer season, than to use fountains, for several reasons, one being that a whole bucketful of water can be poured into a trough once a day; also, because a trough can be made by any one, and in a few minutes' time. The design given contains no novelty, but nevertheless it is perhaps the best trough that can be made, as there is no liability of its being overturned, and it can be moved from one point to another with ease. The top may be covered with lath, two inches apart, or with strips, to prevent the hens from getting into the water. It will not answer for young chicks, however. It may be made of any length, width or depth preferred. The trough should be scalded with soap-suds at least once a week, to keep it clean, which work may be done when the family washing is in progress, using the strong soap-suds for that purpose.

REARING YOUNG DUCKS.

The rearing of young ducks during the height of the summer is not as successful as at earlier periods of the year, and during the present exceptional season there appears to have been a degree of mortality greater than usual. I have received, in the *Field*, says Mr. Tegetmeier, several letters of inquiry as to the cause of the exceptional mortality. One lady writes as follows: "I shall be much obliged if you will tell me what ails our young ducks, and what we can do for them. Up to the age of six weeks they seemed to thrive very well, but within a fortnight about thirty have died. I have not seen them but the poultry woman writes: "They seem to take some trouble in their heads, go blind, and just pine away. I have been feeding them, as usual, on oatmeal croudy." She goes on: There is nothing I can blame except the hot weather and the severe drought.' There have been no deaths among the young chickens or turkeys." Other letters have been so similar that I need not quote them. The exceptional weather has doubtless had some influence in inducing this untoward fatality, but the most potent cause has been the grave errors in feeding the young birds. It cannot be too strongly impressed on all amateurs who attempt to rear young ducks in confined runs, that they are, to a very great extent, animal feeders, and cannot possibly thrive on croudy porridge, meal, or other vegetable food. In a natural state the young ducklings obtain worms, slugs, fish spawn, aquatic larvæ, and insects, of all of which they are deprived when reared in confinement, consequently other kinds of animal diet must be supplied. At Aylesbury and its neighborhood, from whence tons of ducklings are, in the season, sent weekly to the London market —the young ducklings, as soon as dry and able to run, are removed from the hens into the hovels or cottages, thirty or forty being penned together on soft straw; they are fed first on hard-boiled egg chopped fine, which is mixed with boiled rice and bullock's liver cut up small they also have, as they advance, tallow chandler's greaves, scalded in boiling water, and cut up small, and horse flesh is added eventually. Under this strong dietary these gross animal feeders flourish and grow rapidly, being fit for the London markets when under twelve weeks old, realizing in the early months of the year such high prices as render the rearing of ducks by the Aylesbury duckers a very profitable occupation. The character of the animal food given to ducklings is not of much consequence; they do well on greaves, sheep's paunch cut up small, or any waste meat; but animal food of some kind is indispensable to their well doing.

LEGHORNS AS EGG-PRODUCERS.

It is a large Leghorn hen that will weigh five pounds, yet they are, perhaps not excelled as egg-producers by any other breed, their eggs usually weighing about nine to a pound. They have been known to lay as many as 150 eggs in a year, or more than three times their own weight. Compare such production with that of any other producer on the farm, and the work of the hen will appear enormous, far exceeding the cow, proportionately. The cow is capable of producing more than three times her weight of milk in a year, but the greater portion is water, and contains less solid matter than eggs. Viewing the hens as a whole, it is apparent that their production of wealth is far greater than that with which they are credited.

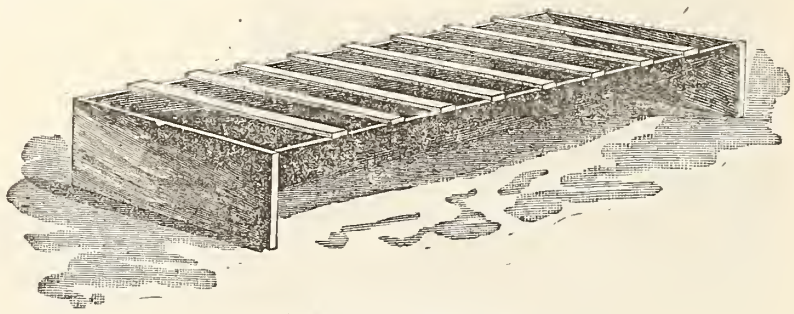
INCUBATOR HATCHES.

If those who use incubators will make a comparison with the results of hatching by hens they will not expect too much. While some hens will hatch nearly all the eggs, there will be some hens whose work will not be so satisfactory. If ten hens are broody, and each is given one dozen eggs to hatch, they will be fortunate if each hen brings off eight chicks. This is eighty chicks from one hundred and twenty eggs. Should as many eggs be left in an incubator as are left in the nests of ten hens the operator would be discouraged, yet the incubator does fully as good work as the hens

THE COST OF A CHICK.

When a hen brings off a brood of ten or more chicks, and but six or seven are raised to a marketable age, it is a loss that the farmer cannot well sustain. It may cost him twenty eggs to hatch ten chicks, as allowance must be made for eggs that do not hatch, and if the hen raises but seven chicks of the ten she hatches, the cost of each chick will be increased to the value of nearly three eggs each. If eggs are eighteen cents per dozen, and but seven chicks are raised from twenty eggs used for incubation, the cost of each chick, in eggs alone, will be about four and one-half cents each. This cost must be met before any food is used Added to this is the loss of time of the hen, as she will not only lose three weeks in incubating the eggs but perhaps lose ten weeks more in caring for them, thus requiring three months from the time she begins to incubate until she begins to lay again, which is time lost.

As the cost in eggs used for incubation, as well as the number which the hen might lay if not incubating, is more than one would at first suppose, the loss of only one chick is quite an item, for where there are a large number of broods the loss of chicks is numerous. Hence, every chick saved reduces the cost of the whole, as each must bear its proportionate share. How to avoid loss as much as possible is a matter of importance. One of the principal causes of loss is the fact that most broods have no suitable place prepared for them when first hatched. The hen is given a dry and warm coop, and she and her brood receive careful attention in the feeding, but the ground may be unsuited for the chicks.



SUMMER WATER-TROUGH.

Young chicks thrive best on a grass plot, and yet a grass plot is the most unfavorable of all locations unless the grass is very short. The best results we ever noticed in raising chicks was on a lawn that was kept as neat as a floor. The plot was about fifty feet square, and ten broods of chicks were placed on it, the hens being kept in coops and the chicks permitted to run on the grass. At no time were they liable to injury from wet grass, and they could be easily seen, and were thus free from cats or rats, which would not venture to attack them on such a clear space, while the chicks were always busy looking for small insects and seeds on the lawn. It was like spreading a carpet on the ground for them, and the loss was not two per cent. of the whole. There is no location equal to a lawn for chicks, provided the lawn mower is used on the lawn frequently.

ARE INCUBATORS BETTER THAN HENS.

Those who contemplate using an incubator the coming winter have no time to lose. True, the incubator will not begin its regular work until September or October, or perhaps later; but the operator should never wait until the time arrives for hatching before he begins to use an incubator. It does not pay to lose eggs and three or four weeks' time just when the chicks should be coming out, as it is then too late to incur any risk. For that reason all experiments in hatching should be done now, for the cost will be less, as eggs are not as high in price as they will be late in the season.

No one will succeed with an incubator unless he is willing to learn how to operate it. The directions may be as plain as possible, but there is no teacher like experience. The one who is willing to take an incubator under his care, study it and operate it and aim to learn, will find himself in a position to succeed when the period for hatching out early chicks arrives. Our advice is to practice now, and the result will be fewer drawbacks later on in the season.

Are incubators better than hens for hatching? They are not. Man cannot excel nature. The incubator is not intended to do away with hens. In the spring and summer, when the hen is in her natural condition, with the warm season in her favor, she will hatch well, and be successful in raising her brood, but hens rarely sit in winter, and they are incapable of raising broods during the cold season. The incubator only takes the place of the hen when the hen cannot be utilized for incubating purposes. An incubator can be started at any time. It will do the work of twenty or more hens and bring out several hundred chicks at one time. As the chicks come out when the season begins cold, some preparation must be made for them, and the care of them is then with their owner, and not with the hens, success depending entirely on the care bestowed by the owner. The incubator permits of the hatching of the chicks so as to get them in the market early in order to secure the best prices. The incubator, therefore, permits of the hatching of early chicks at a season of the year when it cannot well be done by hens, and it opens a road to employment that should receive consideration by all who are interested in poultry.

SUMMER PAYS BETTER THAN WINTER.

The feeding of poultry as it should be done does not differ from the manner of feeding other stock. The necessity of more food in winter than in summer is recognized, but it is during the summer season that the largest profits are secured from hens. It is true that eggs bring the highest prices in winter, but that fact does not imply that the largest profits are secured in winter, for it is often the case that the expenses are greater than the receipts; but in summer there is less labor and care to be given, while the cost of the food is reduced to the minimum.

Every farmer who keeps a few hogs knows that in summer it is best to so feed as to make the most rapid growth possible, while the brood sows are not made fat, but are kept in fair condition only. Fat is detrimental to all classes of stock, and especially in summer. The farmer who has a spare clover field into which he can turn his pigs will consider that the conditions for rapid growth are more favorable than when they are confined and fed on grain or slops. His object is growth. Just so with poultry Have an object in view and endeavor to accomplish it in the best and most economical manner. At no season can poultry be made to pay unless the farmer determines what he wishes to do with his flocks. If producing chicks or making his fowls fat for the stalls is aimed at, he will care but little about feeding for eggs; but if he wishes his hens to lay well, he will endeavor to secure the conditions most favorable to laying.

If a clover field is an excellent place for hogs, it is equally beneficial for poultry. Clover is rich in nitrogen and lime, and the fowls consume large quantities of the leaves and seeds, and without damage to the clover. With a mess of oats at night, and lice kept down, a flock of hens having the run of a clover field or on any grass plot should lay during the entire summer. This, with the waste secured, and the insects, makes summer more desirable than winter; for, if the prices for eggs are less than in winter, the cost is so little as to make the profits in summer much larger than in the cold season.

NOW IS the time to subscribe.

THE BEST BREEDS.

This is a subject which we are compelled to present often, as month after month our readers ask us, "Which is the best breed for market, and which for eggs?" Suppose we attempt to answer it. Is so, the reader will discover that there is something more to be considered than the carcass and the eggs. Now, to explain, should we state that the Leghorns are the best layers, the admirers of the Hamburgs, Black Spanish. Minorcas, Langshans and other breeds would rise in rebellion at once, as each breed is superior to the others according to the conditions under which it is kept. But we may, for obstinacy, recommend the Leghorns as the best egg producers, and the reader procures them. The next season, if he is a novice, he may probably write us a letter something like this: "I found the Leghorns, as you stated, good layers, but they will fly over a seven-foot fence, their combs get frosted, they do not like confinement, and now I wish to know if you cannot recommend a breed not so restless and with smaller combs." So, it seems, our reader must look at something else than the matter of eggs, the conditions to which fowl must be subjected are factors. To oblige him, we write that if he wishes a quiet breed, that does not fly and not subject to frosted comb, to try the Brahmas. He does so, and, after the lapse of a year, he again writes: "The Brahmas did not lay as well as I expected, as they became too fat, not taking exercise, and while they are excellent market fowls I do not like them as layers." Here we find the reader, in the first place, objected to a restless, active fowl, and next to a quiet one. The fact is, the Brahmas will lay as well as the Leghorns, but, as we stated, something depends on the conditions and mode of arrangement. The best breed depends on your skill in management, the climate, the season, the kind of food, the shelter, the range, the location, and other conditions. No living human can select the best breed to-day. A best breed must be selected for each poultryman. What is gold to one may be brass to another. The poultryman himself is a prime factor, and may rightly be said to be one-half the breed. Each breed has its own peculiar characteristics, and has only one dominant "talent" in which it excels, and that talent may be, for one breed, yellow skin, for another, small comb, for another, full breast, for another, large size, for another, early maturity, etc., but no one breed possesses all the desirable traits any more than any one breed of cattle. The only thing we are sure of is that the dunghill has no characteristics of value, and that the pure breeds can be selected to adapt themselves to the climate and conditions necessary for their success and with profit to their owners.

VALUE OF THE RANGE.

A hen on the range keeps herself in condition for laying by being continually at work. If she is allowed too much grain she will become lazy, refrain from foraging, fattens, and soon ceases to lay. This is a matter that deserves attention. Keep the hens at work. When they seek insects, scratch, and travel over a wide area of ground, in order to secure a variety, they are not only lessening expenses, but also keeping themselves in the best order for laying. It is due more to the exercise than to the food which hens receive, to which may be ascribed the greatest value of a range. When hens are in confinement they are liable to be overfed, and it requires extra care on the part of those who manage flocks in summer to avoid overfeeding. We have found that when there is ample forage for hens they need no food at all in summer as they will easily find all the worms, seeds and grass required. A good range in summer will provide eggs with little or no cost to the farmer.

CHICKEN MANURE ON FRUITS.

Do not attempt to save the droppings in summer, as they will not keep easily and much of their value will be lost. The best place for them is in the garden, especially if late crops of cabbage or vegetables are to be grown. They are also useful around the canes of raspberries, currants and gooseberries, and will be more serviceable now in inducing the growth of new canes, than in the spring. They may also be chopped in between the rows of strawberries, or even placed around trees in the orchard.

LICE.

Poultry diseases are largely or generally due to the result of external parasites and these again the result of want of vigor. Many years of experience in the care of poultry indicates that the majority of serious diseases have their origin in external parasites. Such as chicken lice of many species, mites, etc. These most often are the result of want of vigor in the poultry, this want having its origin in internal parasites, unwholesome or too much or too little food, unclean quarters, depressing climate or from a hundred or more other causes. For instance the most prominent one of moulting. We know the light spring moult causes the death of some chickens, and the fall moult the last of the summer is when the most are lost.

That a want of vigor from any cause subjects poultry to being literally devoured alive by lice is demonstrated every day. The flock as a whole may have practically no lice; the owner may think there is not a louse or a mite on his premises. But let a brood of chicks reach their first moult in a bad season of the year for that great draft on their vigor, they begin to droop one after another and then to die in rotation according to their individual vitality. A careful inspection will show them literally swarming with some one or two or perhaps all known species of chicken lice and mites, while if a fine, strong, healthy bird of the same flock, and perhaps roosting each night beside the lousy one, is inspected, will show no lice or other parasites.

A fowl in fine condition has very good natural defences against such external parasites, a nearly perfect defence so long as it is well. But it must keep up constant labor and free itself from them in an environment where they are plenty. But in such a case the least little thing happening, such as a slight cold or over feeding, too much exercising or worry, reducing its vigor and industry in freeing itself from vermin, and one night's depletion of blood by swarming thousands of lice may seal its doom by exhausting its vitality.

The same is also true of the deadly internal parasites. They are, as a rule, always present and are held in check by the natural life forces of the bird. These not being subject to outward foes multiply enormously and death results. Unfortunately the external vermin preying on poultry are of several different species and orders, with very distinct habits and looks. Some of the most injurious, *i. e.*, two or more species of mites, are so minute as to be constantly overlooked. One of the most injurious of these as a rule only infest the poultry at night when on the perch and hide during the day in cracks in the perches and coops. Therefore a yard of poultry may be reduced in vitality by these night prowlers and the owner remains firmly in the belief that there is not a parasite on the premises. Others are so small and quick in their movements that they are hard to see, though there may be thousands of them. The most common chicken louse, and it is a true louse (acarus) may be termed the white, dry chicken louse. It is a grayish white, about the length of a pinhead, breeds rapidly and becomes very abundant at times, often covering horses' stables near chicken coops and soon worries them out of condition. This louse seems to feed on the yellowish white serum of the blood or the liquor that the red corpuscles of the blood float in, and in that way render the blood sluggish in circulation and eventually causes more or less congestion, then fever and then chicken cholora, roup, swelled head and death.

Of course, as to how this louse feeds is in great part theory. Yet it is certain that it is at certain times the primal cause of the above named fatal diseases.

The mites, eight legged, red, little brutes when mature, built like a small spider, seem to feed on the chicken exactly the same as their brethren, red spider, etc., which subsist on vegetable matter, feed on leaves. That is, on the outer cuticle, tearing it with their short and sharp jaws or mandibles, then sucking the exuding juices. Therefore, if you find the skin of a chicken of a rosy red or carmine early in the day you may be certain that mites swarmed on it during the night, and that instead of a night of rest it had a very uncomfortable time of it. Poultry parasites have not received the attention from practical entomologists that they deserve, and especially so on this Coast. Here the climate is perfect for their generation and poultry farming is a great and quite a lucrative industry.

Now do not jump up and say that chicken cholera is not caused by lice and that roup is not caused by mites. I have not said they were. But I do say that in the majority of cases they are the predisposing causes.

How poultry parasites are best destroyed and how yards can be kept free from them is not within the scope of this article. But eternal vigilance and absolute cleanliness, together with the best known lice killers and repellents, secure clean poultry and bushels of eggs.—*D. B. Wier, in Freeman's National Farmer.*

FOWLS FOR THE TABLE.

Of all table fowls the well-bred Dorking still stands pre-eminent, says a correspondent of the *English Live Stock Journal.* The reasons for this are: First, it is a large-sized bird and its meat is tender, savory and juicy, at the same time sufficiently firm in texture. Second, the breast is very broad, deep and projecting. This is the most valuable part of the fowl, and in the Dorking enables one to cut extra wide slices from it. The shoulders also are quite full, which is another good point in its favor. Third, the body is a long parallelogram, thus making it, in comparison with other fowls, like that of the Shorthorn cattle.

The Houdan is the nearest approach to the Dorking of all other breeds, both in size, good shape and qualities of meat. As it carries a fifth toe and a topknot it is generally thought to be a cross of the Dorking or the Poland, yet I have seen it stated in a French publication that they have been known in France for upward of 300 years.

The Game fowl is first quality, but its meat is of different flavor from the two above, resembling that of the pheasant, and for this reason many prefer it. The size varies from large, medium to small, and it does not carry so much meat on the breast in proportion to its size as the Dorking and Houdan. This is deep, but more rounding and less projecting. Some other breeds of fowls are well shaped and moderately full in the breast. Among these I found the Dominique superior.

Most of the eastern fowls are deficient in a good breast save the Langshan, which is said to be pretty fair in this point. The others, except Brahmas now and then, run too much rump where they are extra large. As the meat here is not equal to the meat on the breast and is rather coarse they do not excel as table fowls. But the chickens grow large rapidly, and as people generally are not particular as to the quality of poultry they sell well and are popular with the public, their extra size being their chief merit.

Unfortunately, the Dorkings are difficult to raise in this country. The Houdans are much more hardy and lay an egg considerably larger than that produced by the Dorkings. It is claimed the same blood causes the utility excellence of both breeds. Both breeds have five toes. The Houdans will often show small feathers on legs and between the toes. The Dorking rarely ever does. The Langshan is coming to the front as a great rival in competing for best fowls for the table. It is, without doubt, the most rapid grower of the Asiatics, and meat quickly produced in chickendom is quite a true index to good qualities, provided, of course, good, clean, sweet food has been given. The Plymouth Rocks, when properly fed, are justly entitled to a place near the top as table fowls. At three months old, where chicks have been kept growing, they will average four and one-half pounds, and if they are then to be killed, either for roasting or frying, they have no superiors. If the diet has been a good, varied one, with plenty of sound wheat and cut bone, and no whole corn given until the last ten days before they are killed, no finer poultry of any breed can be found. The care and food has more to do to properly determine which is the best for table use. The breed that will produce the best results in a given time will vary, and in this respect the Plymouth Rocks will more than hold their own with any breed.

EGGS AND BREED.

By carefully feeding the hens, so as to induce each one to lay, the extra labor will be repaired, and this may be done without difficulty. It is well known that some hens differ in disposition from others, which fact is sufficient to warn against mixed flocks. The management required for Brahmas will not answer for Leghorns, yet there are a great many farmers who keep Brahmas and Leghorns together. They make no distinction between hens of the large and small breeds.

If, after the winter sets in, a flock of hens that is composed of any of the small breeds, or crosses therefrom, are kept closely confined, they will fail to give good results, and their inactive life will induce them to begin feather-pulling, which is really worse than a disease among them, This is not surprising when we consider that they are very active when on the range, and lead a busy life. What is the remedy for this disease, which we may term "idleness." If it can be prevented there will be a profit, but if not the result will be a loss. The feed is as nothing compared with keeping the flock busy, and as near the conditions of summer as possible.

It is said that the Brahmas are better winter layers than some other breeds. This claim is not founded on a superiority of the Brahmas for prolificacy, but on the ability of the Brahmas to endure more cold, and their adaptability to confinement. They are simply more inactive and require less exercise. This should guide the farmer in feeding, however. The more inactive the fowl the less corn it requires Not considering the conditions, some farmers feed corn to all the hens alike, and in so doing they supply only a portion of the flock properly, and only a portion produces eggs.

The best course to pursue is to keep each breed, or cross therefrom, separate from the others, and aim to have them busy. If corn is to be made a special food give less to the hens that are quiet and inactive. If there is no opportunity for exercise reduce the corn to a minimum, and feed bulky food. It is more important to have the floor of the poultry house covered with leaves than to have the feed troughs full.

A LOW-PRICED HOUSE.

J. H. Nellis, in *Fanciers Review*, gives his ideas of a serviceable poultry house that can be erected for $25, and will shelter two flocks of twenty to twenty-five each. We condense his description for our readers.

The ideal poultry house must cost little, keep the fowls healthy and profitable, and save labor. It must stand on well drained or naturally dry soil, and surface water must at all times be kept out. Set cedar or chestnut posts deeply and cut off six inches above the ground. On these put sills 2x8 inches. A light frame is built, the sides covered with boards over which heavy tarred felt is fastened by lath. The roof is boards covered with two-ply prepared roofing, and is placed just high enough to walk under comfortably, and slopes gently. The entire length is thirty-two by ten feet wide.

First comes an open shed six feet wide with door in outer wall at front. Next a felt-covered board partition with door at front, then a 10x10 feet pen, a lath partition with door, another 10x10 feet pen and another felt-covered partitition and door, a six foot shed at other end of building with door. The ends of building, enclosing sheds, need not be felt.covered. The open ends of sheds face the south. A twelve light 10x12 inch sash, with the netting inside, must occur in each pen at south side. Holes 6x8 inches are provided to let hens into the sheds on sunny days. Coarse wire netting covers the open fronts of sheds in winter to keeps the hens off the snow. A scratching box seven feet long by four feet two inches wide, by ten inches deep, is set level against the inside partition and the back wall twenty inches from the ground. Twenty inches above this a level platform seven feet long and twenty-five inches wide, with eight inch cleats at each end extending upwards and beveled both ways towards the ends, form a rest for a one and one-half by four inch by seven foot movable roost-bar. The other pen is furnished in the same way, against the opposite corner. Three nail kegs each with holes cut in sides make good nests. Use pine saw dust in nests. Provide cut hay or straw in scratching boxes in which scatter grain often and change every two weeks. Put springs on all pen doors so they close quickly behind you. Dispense with all ventilators. In hot weather, fasten the doors open a trifle. Feed soft feed and oyster shells on sills. Drive a few four-inch wire nails through a narrow board and tack on sill. On these stick beets and cabbage. Put corn in hoppers and arrange with windlass, rope and pulley to let hens eat in evening, then elevate out of reach of rats. The whole ground floor is available to hens and is easily cleaned.

Plymouth Rocks, Wyandottes and similar breeds will not freeze at twenty degrees below zero. Put the timid and young fowls in a pen together. Birds of the same breeds do best together.

For a house to hold seventy-five to 100 fowls we suggest one on the same plan but larger, say 12x56, allowing for two sheds 12x12, and two pens 12x16.—*Farm Journal.*

WHEN TO MAKE THE PROFIT.

When in the natural state, birds live on seeds, grass and insects. The aquatic birds require more animal food than the gallinaceous, which is secured largely in the shape of small fishes and such insects as inhabit the water. In securing their food, however, birds perform an enormous amount of work. The domestic fowl is not compelled to seek its food over as wide a range as may be necessary when in the wild condition, as domestication not only alters its requirements to a certain extent but also provides a greater supply and a more varied assortment of food, due to cultivation of the soil.

The domestic hen still requires food of a varied character, and she will accept it in almost any shape. If on the range, the many varieties of grasses not only provide food with their leaves and stalks when they are in a green and succulent condition, but their seeds are also appropriated by the hens when the plants have matured, As domestication seems to increase the number of injurious insects, both on the plants and near the surface of the ground, the hens find an ample supply of animal food, and if they are very active and industrious they will fill their crops with insects, seeds and grass several times between sunrise and sunset.

This matter is referred to in order to point out to farmers how cheaply eggs are produced in summer, when hens can have ample range, and to advise farmers to avoid feeding their flocks during the summer, at which season the use of grain leads to disease by causing the hens to become too fat, as well as rendering them unprofitable as layers. The only food required for hens on the range is a small allowance of ground bone daily, but even this may be omitted if the indications are favorable to an abundance of insects, which will be all that is required.

INCUBATORS AND BROODERS.

This book is No. 2, and is intended to give information in regard to Incubators and Brooders, and is by P. H. Jacobs, who has given incubators his attention for many years. Its price is twenty-five cents, but to those who subscribe, or renew, we send the book, with the POULTRY KEEPER one year, for sixty cents. Printed in brevier type, and full of designs and illustrations.

SOFT FOOD.

Opinions differ greatly as regards what is the best food for poultry. Some people swear by soft foods of various kinds, whereas others patronize a grain diet alone. All sorts of mealy doughs, however, are a wholesome food for poultry, and result in producing more eggs than feeding a whole grain diet pure and simple. The ideal diet for poultry should be neither too much soft nor too much hard, but just the happy medium. Several people feed soft foods alone in every possible form—with and without pepper, with and without pot liquor, with and without grease. Experiments made with such feeding suddenly and gradually in all weathers proved unfavorable in every instance. Several good birds died of diarrhœa induced by such feed, while the others suffered greatly from sicknesses of various kinds. A prominent continental breeder's opinion on soft feeding is this: "My experience in soft feeding is just the same, and I am convinced that fowls cannot do without hard food. Where much soft food is given unhealthiness generally reigns. Of course, a soft meal now and then is of great advantage." A change of diet is also essential to good condition—charcoal, burnt bones, sand, a little salt, while onions, cabbage, potatoes, beans, etc., are all good for health, and hence lead to egg production. All kinds of poultry are also very fond of milk, and it appears to make no difference to them if it is sour, thick or clabbered. The waste from cheese rooms or buttermilk from the churn is excellent food, especially if mixed with an occasional meal feed. To make hens lay well feed as follows: Put two or more quarts of water into a kettle and one large seed pepper and boil; now stir in coarse Indian meal till thick; cook this one hour and feed hot. Horseradish may be chopped fine and stirred in, with the result that you will get eggs daily, instead of none perhaps before feeding. Many people complain that their hens won't lay; to such we recommend cooked feeds, fed hot, especially good egg bringers being boiled apple skins seasoned with red pepper, or boiled potatoes spiced with horse radish. Corn or wheat fed alone tend to lay on fat and keep egg baskets empty. A spoonful of sulphur stirred in with cooked foods is a good thing for hens; it frees them from vermin and gives tone to the system. Some people object to the giving of sulphur. These I would remind that sulphur is largely present in the feathers and eggs of fowls, and where birds are kept in confined spaces it only seems reasonable that a certain amount of sulphur should be given them occasionally. Of course, it is not required if cabbage leaves or some other sulphur-containing food is given. Lime should also occasionally be given as a solution in water.—*Feathered World*

HARD CROP.

This is the term frequently employed by those who write requesting a remedy for a certain affection to which fowls are liable. This disorder is of two kinds—dry caked, hard crop, and the undigested, swollen, sour, watery condition of the contents of this receptacle at times. Either is bad enough and both are fatal to fowl life, if not taken seasonably in hand. It is not a nice job to perform, but an unpleasant though not very difficult operation, to open, cleanse and sew up the crop thus affected. This is indigestion, simply. The food or water does not pass into the system in the desired way, but lodges in the crop. This ferments, swells, hardens, or sours, and death follows, if the bird be not relieved.

Cut near the top of the crop a slit, lengthwise, with a sharp knife, and then turn out the offending substance by gently pressing it away with the hand, while another person holds the bird firmly upon its side. When all is removed, sew up the slit edges of the crop skin closely with a small sized needle and fine white silk. Feed sparingly on soft food for three days, and, generally the fowl will recover. This process is for valuable fowls. With a common bird a knock on the head and a swift burial is the least trouble and best "remedy" for swollen crops, as it is for every disease that is liable to leave the fowl in a delicate condition, requiring nursing and care that its value will not guarantee.—*Poultry World.*

FARMERS AND POULTRY SHOWS.

In a month or more the fall fairs and poultry shows will begin, and the farmers should take an interest, especially in the poultry department. There are so many farmers who do not know the different breeds, and who would, no doubt, improve their flocks if they better understood the merits of pure breeds, that to visit the shows, or exhibiting such birds as they have, leads to greater and more thorough knowledge of selection and management. Comparison is a teacher most useful to farmers, and at the poultry shows, where the birds are in large numbers, with each breed separate from the others, the farmer can at a glance notice many differences and peculiarities that might never attract his attention under other circumstances. If the farmer is an admirer of pure breeds, and takes pride in his stock, he should exhibit in order to educate others, and to display to the public that which he has improved and perfected.

AUTUMN MANAGEMENT OF POULRY.

At this time the poultry yards are usually crowded with old and especially young stock. Crowding poultry is always dangerous, and disease is apt to make heavy inroads into the flock, if the necessary precautions of cleanliness are not strictly attended to. With greater numbers of large fowls comes an accumulation of filth, then vermin and disease. The easiest way to get around the difficulty is by the free use of absorbents in all places where fowls are crowded together during the night. I usually recommend sifted coal ashes as one of the best absorbents—this simply because it is most likely on hand during the winter, and a waste material for which most people cannot find a profitable use. But in the warmer part of the year, and just when absorbents are needed more than at any other time, coal ashes are not often available, and wood ashes should not be used for the purpose, as they are worth more for other uses and worse than worthless as an absorbent in a poultry house.

In dry muck and road dust we have most excellent material in this emergency. You may think that road dust is of no value. It is true it can be had for the hauling in most places, and during any dry spell in summer or fall; but I would be willing to pay a reasonable amount of cash for it if I could not get it otherwise. No poultryman should neglect to get a load or two of it, or a load or two of dry muck, if available, and store it right on the floor of the poultry houses for the fowls to scratch in and dust themselves, and for free use under the perches as needed. It tends to cleanliness and freedom from vermin,

A load or so of river sand, with the small shells, etc., will also come handy, furnishing, as it does, all the grit and lime the fowls may need during the winter. This material also tends to cleanliness, and with the road dust and muck and coal ashes will make a most excellent absorptive material for poultry house floors. With these requisites, and the further precaution of an occasional washing or spraying of the perches, and the whole interior of the house, with kerosene, the battle against insects and disease is about won.

The matter of food at this time is really of minor importance, although well worth attention. On most farms the fowls now find plenty of scattered grains and weed seeds in wheat, oats, buckwheat and corn stubbles, and a still more generous supply of bugs, worms, grasshoppers, etc., and if they do, even the fattening stock will not need additional rations. Grasshoppers, which are often available for poultry food in unlimited quantities, are a favorite dish for all kinds of fowls; extremely palatable, it seems, nourishing and fattening, and yet of easy digestion. Fowls thrive wonderfully on an almost exclusive diet of these insects, grow faster and fatten quicker than on almost any other food they can get.

The great mistake made in poultry management by the average farmer is the lavish use of corn at this time. There are the nubbins and immature ears, etc., to be disposed of, and first, you know the entire flock is given all they will consume. This is all right so far as the stock to be marketed before winter is concerned, but it is a positive damage to the egg-producing capacities of the fowls to be kept over. The latter should have little corn at this time, and often will need little else in addition to what they pick up. But if they do not find enough for their support and to keep the egg basket full, try a daily ration of wheat. America will have plenty for home consumption, and all that foreign countries may wish to buy. A shortage is not to be feared, nor will the prices be likely to go to an excessive figure. Even at $1.25 per bushel, it will pay to feed wheat to laying fowls very largely. Wheat bran is also a most excellent food, and stimulates egg production.—*T. Greiner, in Practical Farmer*

BROKE UP A SITTING HEN.

It is a bucolic adage of immemorial antiquity in the land of steady habits that nothing on earth can "break up a setting hen," ordinarily resolute, except death; but the hoary maxim has just been successfully impugned in this hill-upholstered town—in fact, controverted and rebutted. A thundrrbolt did the hutting and rebutting, and it was one of the long, dizzy, kinky, twisted, weirdly colored bolts that have been extremely fashionable in Connecticut for the past three years.

The term to break up a sitting hen is understood in the Nutmeg State to mean impoverish her animal economy of the dogged hereditary, instinctive predetermination inherent in every hen "to set"; and the lightning did just that for the Mansfield hen. The hen has no further desire to sit or set.

It all happened one night, and very quickly. Squire Seymour Dunham owns the hen the lightning broke up, which has since been waddling and wabbling about on her two blistered and game legs, with all fluffy feathers scorched from her starboard side well aft. The thunderbolt didn't exactly mix the hen—she was small game for a bolt of its calibre, loaded with twenty or thirty thousand voltage, to be aiming at—but it mashed her entire environment, scooped her nest bodily from under her, including one dozen Cochin-China eggs which it stirred up into a hasty batter and cooked into an omelet that was liberally pleated with the timothy grass of the nest. Then it carried the composition to a distinct part of the henhouse and hung it up on a pi ket of the paling. It was in the electric cooking process that the hen had her feet blistered, was touched up aft in a painful way, and inoculated with a pregnant lesson on the futility and peril of trying to do any more sitting in Connecticut until a change of lightning is ordered for this territory.

There was quite a lot of fowls in Seymour Dunham's henhouse on the night of the phenomenon and though the sitting hen unquestionably caught the gist of the thunderbolt fairly and squarely, nevertheless in getting at its principal game the lightning knocked nearly two dozen hens and the family rooster off their perch on the centre pole of the cote, scorched the pole, portions of which it charred, and plowed a channel in the ground, flinging showers of mud against the walls of the hennery. Mr. Dunham's henhouse is not many feet distant from his dwelling, but the freak bolt did no damage to his other property.

The fact is, he is really glad now that the bolt came, for he had tried every reasonable method in vain to inculcate the lesson that the lightning instilled into the old hen so thoroughly in about an eighth of a second. Moreover, the electrical shock not only broke up the sitting hen but exploded the old bucolic myth to the effect that lightning won't touch feathers or anything that wears them.—*New York Sun.*

BEGIN IN THE FALL.

The best time to begin with poultry is in the fall, says *Mirror and Farmer*. If the spring of the year is selected there will be too much hurry, and it will also be difficult to secure the proper stock. In the fall the choice of birds and the securing of fowls is within the reach of all. It is an important matter to select hens that are in good health, and which, if not pure bred, are at least well bred. It is difficult to find two hens alike, and there is always a larger number of fowls on hand at this season, and later on than in the spring.

At least 500 hens would be necessary in order to make a business of poultry, and when we use the term business we mean that the poultryman has decided to depend upon a certain number of hens to secure sufficient profit to amply repay him for his labor and care. In the spring the cost of 200 hens would be from $100 to $200 greater than in the summer. The reason for this difference is that in the spring the surplus stock is all sold and but few fowls can be spared, while in the summer season the reverse is the case.

We would not advise a beginner to invest entirely in pure-bred stock—not that we do not advise the use of pure-bred fowls—but because the cost is too great. He should, however, aim to secure hens of the best crosses, or that show the effects of the infusion of good blood. When the spring arrives and the pullets for the following year are to be raised, it is cheaper to procure pure-bred males and by such means grade up the stock to the required purposes. We believe, however, that the best results are obtained from the pure breeds, but if there is to be a beginning with a limited capital the easiest and most practical way is to begin with good hens secured from whatever sources possible, and improve every season by the use of pure-bred males. Our object in calling attention to this matter is to not overlook the fact that during the summer and fall hens can be procured of better quality and at less cost than at any other time.

FATTENING YOUNG FOWLS.

While growing, the young cockerels intended for market will not fatten as readily as will adults, but they will make a gain in weight that will fully compensate for any care that may be given. If they cannot be made fat, get them in as good condition as possible, so as to secure the best prices. The young pullets will also convert their food into growth rather than into fat; and this is desirable. The males should be made fat and the pullets kept in moderate condition To do this, separate the young cockerels from the pullets and give the cockerels all the corn they will eat, but give the pullets little or no corn, a mess of meat, two or three times a week, being better than any other food for them. All birds should be separated from the flock if they are to be sent to market, as it is more economical to do so, while it avoids overfeeding the laying hens.

RAISING GEESE.

There are many farms upon which geese may be profitably reared. Water beyond enough for drinking purposes is not required. The chief necessity is the possession of an abundance of grazing land. This need not be valuable, but such as is usually met with upon thousands of farms in New England and New York. Rough, rocky hillsides will afford geese excellent pasturage; and, as these birds are close feeders, cropping most species of plants snugly to the ground, noxious weeds and other undesirable vegetation will be kept down and eventually "choked out." In this way geese form a good second to sheep in the reclamation of wild, waste land. Geese will produce two or three litters of eggs per season: the first of these may be given to hens to incubate, and the last one to the old goose herself, if thought best. Perhaps, however, the old hens had better do all the hatching, as the geese themselves are inclined to be heavy and bungling in their movements, often treading upon the young goslings. The great inducement to the rearing of geese is the fact that they can be produced so cheaply upon the many wastes of the farm. The main growth can be made on grass alone, only a small quantity of corn being demanded for fattening, or "finishing off." Spring goslings should dress at least ten pounds apiece by the holidays, when roast goose forms considerable of a dish to many of our people. Thus it will be seen that geese rearing offers considerable inducements as a profitable business venture, providing, of course, grass in abundance and other cheap food are readily attainable. This is not all, however, as many of our standard breeds are quite ornamental in appearance. In our flocks of poultry, geese generally provoke the most comment and admiration from visitors. The carriage of the goose is stately and quite imposing; and her operations are decidedly interesting when she appears upon the surface of a sheet of water, enjoying her daily ablutions. The Toulouse and Embden are pre-eminently the most desirable breeds. An average weight at maturity is twenty pounds apiece.—*Rural New Yorker.*

SPECIAL BREEDS.

Any of the breeds will give satisfactory results at certain seasons, and be deficient at others. Some breeds will endure the winter better than others, and lay during cold weather—such as the Brahmas and Cochins, which are considered special breeds for winter laying—yet we doubt if those breeds lay as many eggs in a year as some other breeds, or give as large a profit. It will be of advantage to every farmer to take up some special breed and experiment with it, in order to learn its adaptability to his climate, quarters and the conditions of the farm.

For Sale.—A new P. S. Incubator 200 eggs, direct from manufacturer. Price $30. Great bargain. **MRS. E. L. MARTIN, Seaford, Del.**

WEBSTER & HANNUM, Cazenovia, N.Y. GENTLEMEN: New Berlin, N. Y. **The Bone Cutter you sent me on trial works to a charm, my children find no trouble in cutting meat and bone enough for 100 hens and 300 chicks. If all manufacturers deal as square by their customers as you have by me, there would be less grumbling. JAS. P. HIEL.**

Excelsior Poultry Farm. 25 STANDARD BREEDS 25. Send stamp for Catalogue. **F. S. STAHL,** *Manager,* Quincy, Ill.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

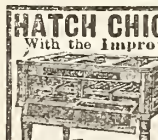
W. G. MYER, Madison, Wis. Lt. Brahmas; B. P. Rocks; B. Langshans; P. Cochins. Young stock. Write for prices and description.

Webster & Hannum. Amount cut by power 2,337 pounds green bones with your No. 1 cutter. It's still in good order. T. E. Stanton, Maulins, N. Y.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks, choice Cockerels $2 to $3 each. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

Sweepstakes at Chicago, 1891 B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. **F. M. MUNGER, DeKalb, Ill.**

HATCH CHICKENS BY STEAM With the Improved **Excelsior Incubator.**



Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made. Circulars free. Send 6c. for Illus. Catalogue. **GEO. H. STAHL, Quincy, Ill.**

ST. BERNARDS AT STUD.

Ch. Scottish Leader fee $10; Eboracum, fee $10; King Regent, fee $35.

COCKER SPANIELS AT STUD.

Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free.

SWISS MOUNTAIN KENNELS, Germantown, Philadelphia, Pa.

BOOM THE LEADERS!

The two best poultry papers on earth are
FARM POULTRY ..... 50 cts.
and
POULTRY KEEPER ..... 50 cts.
We will send **both**, for one year, for **only 70 cts.**
I. S. JOHNSON & CO., Boston, Mass.

BONE CUTTER FREE!

To any one proving that we ever lost a premium on our Bone Cutters, when in competition for premiums will be presented with one of our $30 Power Cutters free, Rochester and New York included in this. Send to us for the truth of this much talked about premium, and see what the Secretary says. We don't have to misrepresent to sell our machines. **WEBSTER & HANNUM, Cazenovia, N. Y.**

HAWKINS

breeds America's best **PLYMOUTH ROCKS, Barred and White. WYANDOTTES, Silver and White.** More prizes awarded this strain than all others combined. Selected Breeding Birds that will produce winners. Finely illustrated catalogue of America's greatest poultry farm, free. Lock Box 4. **A. C. HAWKINS,** Lancaster, Mass.

Spratts Patent

Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N.Y

ONLY $1.10! CANNOT BE EQUALED!

FARM POULTRY (Monthly) **50cts**
POULTRY KEEPER (Monthly) ..... **50 "**
FARM and FIRESIDE (Semi-Monthly) **50 "**
MODERN COOK BOOK ..... **50 "**
Total **$2.00**

All sent postpaid on receipt by us of cash or stamps, **$1.10.** Sample papers free. Address

FARM POULTRY,
Box F. P. BOSTON, MASS.

Webster & Hannum. Have given cutter a fair trial. it does the work grandly. **AUG. D. ARNOLD, Dillsburg, Pa.**

"Everything For The Poultry Yard."

Poultry and Supplies

MOST COMPLETE STOCK IN AMERICA.

PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.

Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.

Do You Want Our Catalogue?

60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.

MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.

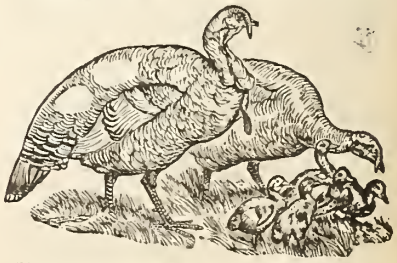
SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,**
1011 Arch St., Philadelphia, Pa.
145 Grand St., New York.
36 East Madison St., Chicago.
627 Smithfield St., Pittsburg, Pa.
228 N. Howard St., Baltimore, Md.
170 W. 4th St., Cincinnati, O.
Oldest Homœopathic Pharmacy. Established in 1835.
The Poultry Doctor, 85 pp., 12mo, cloth, 50 cents.

LIKE WILL BEGET LIKE."

700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexis,"** the grandest specimens of these varieties owned in America to-day. At **New York**, Feb. '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. *"Like did beget like."* I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

We are So Anxious
That you should see our new circular on
Poultry Supplies.
It illustrates the most complete line ever offered.
FREE
Johnson & Stokes,
—SEEDSMEN—
217 & 219 Market St., Phila., Pa.

HOW TO RAISE TURKEYS!



The numerous diseases that are usually prevalent among very Young Turkeys, may be prevented by the use of

CARY'S PILLS.
Send for Circular.
E. FOUGERA & CO.,
30] North William Street, New York,

Webster & Hannum. Cutter works like a top. J. E. PENKIN'S, West Stoughton, Mass.

S. S. Hamburgs and S C. B. Leghorns. Superior young stock; prices low. A. L. Cary, Lewis, O.

Ind. Games, stock of Superb Chicks for sale, at living prices. **A. J. MOWRY, Milan. O.**

Webster & Hannum. Cutter is all you say it is. **C. T. GOODALE, Meadville, Mo.**

For Sale.—Pekin Drakes, $1.00 each. Address MRS. J. W. RITTER, Vandalia, Ill. Box 253.

Caponizing done by an expert operator, at reasonable rates. Apply to H. Burkholder, Clyde, O.

White and Bl. Langs., Buffand Wh. Cochins, Ba. P. R'k. Stock and eggs. S. L. Farrar, Bath, Me.

Webster & Hannum. Am very much pleased with it. Frank Leeke, Mascoutah, Ill.

$50 buys heater, 400 ft. 1 in. cap, and attachments for 30 ft. house. A. J. Bridges, O'Fallon, Ill.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

WEBSTER & HANNUM. Cutter works boss. **J. R. URICH, Mendon, Ill.**

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the **best** W. Leghorns, L. Brahmas and W. P. Rocks.

EGGS from prize winning B. Turkeys. Jos. W. Fleming, Buckingham, Ill. Stock after Sept.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

Jumbo I. Games. Frayne, Champion and Agitator strains. Cir. P. O. Hopkins, Hammansburg, O.

White Fowls. Stock for sale, cheap. W. Polish, W. Cochins, W. Leghorns, bred from prize winners Cir. free. Geo. A. Friedrichs, Erie, Pa.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

Prize winning S. and W. Wyans., I. Game and P Ducks. Stock and eggs for sale, send for Cir. **M. H. LEIDY, Blooming Glen, Pa.**

Webster & Hannum. Other cutters standing idle, using yours in prefereuce. F. W. Gaylor, Saratoga Springs, N. Y.

"Wide-Awake Pennels." A grand lot English Beagle puppies, about 5 months old. $5 each, with "Pedigrees." T. Wills Hemphil, Glen Mills, Pa

Only $10.00. Two 300 egg Hot Air Incubators, first class. One 600 egg. Eureka, $25 00. **H. S. MARTINDEL, Dolington, Pa.**

For Sale.—Young fowls from first prize stock, B P. Rks, G. and S. Wyans., B. Langs., Ind Games and S. C. W. Legs. Eggs. John Wooley, Streator, Ill.

$184 MADE FROM 31 HENS last year by using good nests. All about it for stamp. **F. GRUNDY, Morrisonville, Ill.**

Webster & Hannum. Cutter works fine, does the work perfectly, all praise it. J. O. Depaud, Blue Springs, Neb.

PIT GAMES ONLY. ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

BEATTY'S PIANOS and **ORGANS** $33 up. Want agt. Cat'lg. **free.** Address DANIEL F. BEATTY, Washington, N. J.

Low Prices.—Eggs in small or large quantities, also stock. S. C. W. Legs and W. Wyans., Knapp St., cross b'ds for br'ls. B. H. Noxon, Elm St., Ithaca, N. Y

Buff Legs., Bn P. Rks., I. Gms., Bl. Mins., P. Rks. Eggs $2. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

Webster & Hannum. Cutter gives perfect satisfaction as to good and fast work and light running. A. E. BLEAM, Milford Square, Pa.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. **D. M POLING, Van Wert, Ohio.**

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

Webster & Hannum. Cutter works first class. Any one doing business with Webster & Hannum will find them up to their word. **E. W. BROWN, Jr., Old Mystic, Conn.**

SPANISH 29 years. **J. BENNETT, Sunman, Ind.** Circular and my photo free.

The Cream of the Earth! R. C. B. Legs., B. P. R'ks, Sil. Wyans., P'k Bant. Nothing but high scoring birds in our breeding pens! Eggs and Stock in season. Cir. Clarence L. Smith, Loveland, Colo.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass**

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock. Exhibition birds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Phillimmon strains. P. H. Jacobs, Hammonton, N. J.

W. & B. MINORCAS. Fine exhibition birds and first-class breeding stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

$20 PHOSPHATE FOR WHEAT. Sold to farmers direct. No Agents. **York Chemical Works.** York, Pa.

Webster & Hannum. Very sorry I did not have one before works very easy and perfectly, all are pleased with it. **J. S. FRENCH** (N. Y. Life Ins. Co.). **Wilkes Barre, Pa.**

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in sea. Cir, W. A. Williams, Rome City, Ind.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

Northup's Black Minorcas. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens. $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. **CHARLES RIVER POULTRY YARDS,** Newton Lower Falls, Mass.

BIG BARGAINS! In order to make room for our growing chicks we will sell for less than half their value 100 P. Rocks, 50 Lt Brahmas and 25 Mammoth Bronze Turkeys. J. F. Barbee, Millersburg, Ky

Webster & Hannum. I wish to state Bone Cutter meets the requirements satisfactorily runs easily and does good execution. J. Y. Bicknell, Buffalo, N. Y.

LIGHT BRAHMAS. Heavy winners at Bloomington, Ill., Dec. 1892, and Indianapolis, Ind, Jan 1893. Stock for sale. **ALFRED DOYLE, Morgan Park, Ill.**

HOWELL'S LEGHORNS. 400 White and Brown Youngsters ready for fall and winter shows and next year's breeding. **C. E. HOWELL, Elmira, N. Y.**

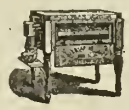
PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. **G. W. PRESSEY, Hammonton, N. J.**

Now is the time to order your Sheep and Beagle Dogs. I have some extra fine **Hampshiredown** Ewe and Buck Lambs for sale, also Poland China Pigs and broken Beagle Dogs, variety of Poultry. Stamp for Cir. A. Elwyn Strode, West Chester, Pa.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE **WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.**

BUFF WYANDOTTES, PLYMOUTH ROCKS. **EGGS** $5.00 for 13, from prize winning birds, while getting, get the best. **J. D. WILSON, Worcester, N. Y.**



BUY THE BEST. The Improved Monitor Incubator. Hundreds of Testimonials **from all parts of the world** as to its merits over all other makes. Large book with cuts for stamp. Address **A. F. Williams,** Bristol, Conn.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1 00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.90, postpaid. They make handsome and valuable books. Address **Poultry Keeper Co.,** Parkesburg, Pa

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata, telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. R. Brabazon, Delavin, Wis

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). **100 per cent.** more made in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS.** Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa

MAPLE FARM DUCK YARDS.
The Largest Duck Farm in America
Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices. **JAMES RANKIN, South Easton, Mass.**

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN** and **WHITE LEGHORNS, BLACK, BUFF** and **PARTRIDGE COCHIN.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

CHOICE STOCK FOR SALE after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH, Utica, N. Y.**

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes,** Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.** by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,
ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.40 **Per Roll.**
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 **Per Roll.**

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.

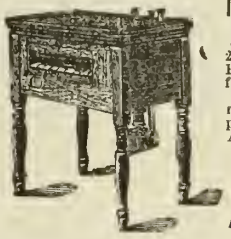
PETER DURYEE & CO., 215 Greenwich St., N. Y.

SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet with Coating, Caps and Nails. Sample and circular free.

A. F. SWAN, 38 Dey St., N. Y.

OUR CATALOGUE FREE **POULTRY SUPPLIES** HARVEY SEED CO. BUFFALO, N.Y.



The Prairie State Incubator takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 24th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $2[illegible].00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.

Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders 58 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.

ALL MACHINES WARRANTED.

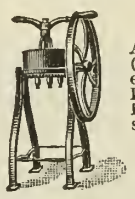
PRAIRIE STATE INCUBATOR COMPANY,
Homer City, - - - Penna

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.

It is acknowledged to be "**The Best Poultry Magazine Published**" in the world.

Send for **Index** to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin with any back number you desire.**

Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "**What has been done, can be done again.**" Remember the price; 50 cts. one year; six months 25 cts.; sample free. **Remit** cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**



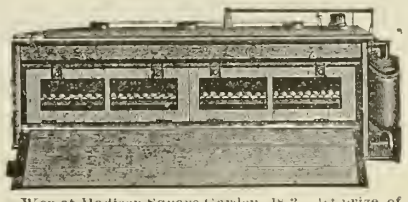
MANN'S CELEBRATED BONE CUTTERS.

Awarded 1st and 2d prizes at both Rochester (Fair) and Madison Square Garden (Poultry Show) over all other exhibitors. No other bone cutter ever yet received even a 2d prize in competition with it. Four Silver and Bronze Medeals, eight Diplomas and ten First prizes received. Forty-eight editors of such papers as Farm Poultry, Poultry Keeper, etc., etc., endorse it Its superiority is unquestioned. Stamp for Illustrated Catalogue, free if this paper is mentioned.

F. W. MANN CO.,
MILFORD, MASSACHUSETTS

BONE AND SHELL FOR POULTRY.

Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The lime of oyster shells furnishes shell material. The *granulated* size is for *adult* fowls: the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address **FITCH FERTILIZER WORKS, BAY CITY, MICH.**



Won at Madison Square Garden, 18 2. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular. **Jas. Rankin, South Easton, Mass.**

Webster & Hannum. Send me 4 more No 2 cutters. They surpass any cutter on the market. Do more than you say. J. W. Lyder, Akron, O.

KNAPP BROS.
ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD
WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.

Proof—The records at 29 of the **leading** shows during the past ten years—**Highest Honors every time.** We sell annually **hundreds** of **Exhibition** and **Breeding birds** but **never** at **any** price, our **best** tested **breeding** stock, $400 in **one** order at a recent sale, for 18 show birds. **OUR MATINGS** for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce **sure winners** and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. **100 fine breeding Cockerels,** separate or mated up in **pairs, trios or breeding pens** to suit customers, at reasonable prices for quality. **EGGS** for **HATCHING** from our **choicest matings,** at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address

KNAPP BROTHERS,
BOX 501, FABIUS, N. Y.

CAUTION!

The statement made by another Bone Cutter Manufacturer, that his Bone Cutter took 1st and 2d over all other exhibitors at Rochester and New York, is *false* and meant to mislead. Our Bone Cutters were not entered in time to compete for premium. *Moral:* when you find a man that wilfully misrepresents, its well enough to let him alone. Get our Circular which speaks the truth.

Webster & Hannum, Cazenovia, N. Y.

ROCHESTER, N. Y., Feb. 4th, 1893.

To whom it may concern:

This is to certify that Messrs. Webster & Hannum exhibited a Bone and Vegetable Cutter at our Western N. Y. Fair, Sept. 1892. The said Cutter was entered for exhibition, only as according to the rules of our Society it was too late to compete for the premium offered, but the Judges passed on the machine exhibited by Webster & Hannum and made a report "highly commending" said machine.

H. A. Kingsley, Sec'y.

CAZENOVIA, N. Y., May 1st, 1893.

We, the undersigned residents of Cazenovia, N. Y. take pleasure in certifying to the uprightness and responsibility of Messrs. Webster and Hannum, of this place. They are both well known and highly esteemed in this community and both hold important offices of trust and responsibility with credit to themselves. Any person doing business with them may rest assured they will do just as they agree and always deal honorably and upright.

J. W. Howson, Post Master, Cazenovia, N. Y.
M. H. Kiley, President, Cazenovia, N. Y.
J. H. T E Burr, Banker, Cazenovia, N. Y.
G. H. Benjamin, Justice Peace, Cazenovia, N. Y.
C. B. Cook, Supervisor, Cazenovia, N. Y.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P. O. Goochland Co., Virginia.**

LADIES!! Why Drink Poor Teas?

THE GREAT AMERICAN TEA COMPANY

When you can get the **Best** at **Cargo prices** in any Quantity. Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums **given** to **Club Agents. Good Income** made by getting orders for our celebrated goods. For full particulars address THE GREAT AMERICAN TEA CO. P.O. Box 289. 31 and 33 Vesey St., N. Y.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Preventing Lice.—Will you please tell me what will keep chickens free from lice?—M. J., Coronado, Cal.

Dust them with insect powder. Drench the poultry house with *boiling* hot soapsuds, adding a pound of concentrated lye to a tub of the suds.

Legs are Weak.—I have a cockerel that I think has leg weakness. He eats all right, and also crows, and is generally healthy looking but his legs are weak, and he sits down to eat. What ails him, and what is a good remedy?—G. J. F., Seymour, Conn.

The bird is fat and growing. Keep him on straw—no roost—feed no grain, and give fresh bone and meat, with plenty of grass.

Diseased Bone.—Is bone from diseased cattle, such as can be gathered on the prairies, good for poultry? 2. In using Persian insect powder, must each chick be caught separately, or by throwing down some feed, and getting them in a bunch, can the powder be sprinkled over them?—H. E. F., Greene, Iowa.

1. It is not safe to use bone from diseased animals. 2. Each chick must be well dusted separately.

Chicks in a a Car Load.—Will you tell me how many live chickens are in a car-load?—G. N. G., Henrietta, Texas.

We are unable to reply, as so much depends on the coops, and how closely the birds are crowded.

Maturity of Hamburgs.—I have S. S. Hamburg chicks hatched the last part of April. Will they be matured by the 15th of September? I should like to exhibit at the Fairs. They are the size of quails now.—H. S., McConnells, Ills.

They should be fully matured by September, as the small breeds mature quickly.

Now Blood.—July Hatch.—1. Would it injure the progeny, in fine markings and egg production, to cross a cock of a particular strain on hens of another strain, all being of the same breed? 2. Would Leghorn chicks, hatched in July, be matured in December? About what month would their eggs be fertile?—D. M., Lowell, Mich.

1. It would be an advantage to do so if careful selection was made. Of course, to preserve markings the parents must be well marked. 2. Leghorn pullets often begin to lay when five months old, hence your pullets may begin in December, but the eggs may not all be fertile.

Rye and Millet Seed.—Please inform me if rye is good for chickens, and if millet seed is good for young chicks?—W. W., Hoppenville, Pa.

Yes, in both cases.

Mosquito Bites on Chicks.—Can you tell me what is good for mosquito bites on little chicks, and if it is good to take the hard skin off the end of their tongue—some call it "pip?"—J. S., New Orleans, La.

Annoint heads with a drop of sweet oil, adding ten drops oil of pennyroyal to a gill of the sweet oil. Also, give one or two drops of the mixture on the tongue.

About Eggs.—1. How many eggs will 500 laying chickens produce in a year? 2. Is not twenty cents per dozen a good average price? 3. How many tons of feed will it take to keep 500 chicks, per year? 4. Will hens lay as many eggs, and do just as well without roosters as with them?—J. H. H., Cherokee, Iowa.

1. About 50,000. 2. Yes. 3. About fifteen tons. 4. Yes.

Heads Bare.—Will you please inform me what is the trouble with some of my hens? Their heads are entirely bare clear down to their necks, and the skin seems loose on the head. They eat well, seem lively enough, but very thin in flesh, though hearty.—Mrs. S. A. L., Billerica, Mass.

Probably feather lice. Bathe the neck and head with sweet oil, and feed a little stimulating food.

Eggs Don't Hatch.—Will you please tell me why my eggs don't hatch; they are White Leghorns. They are in a yard 20x20 feet, and only six of them in the yard. I feed corn, wheat and bran, and also give them grass. I only got three chicks out of thirteen eggs.—J. F., Sioux City, Iowa.

The hens are probably too fat.

China Eggs.—It is often cold enough to freeze water in my poultry house in the winter time, but I have noticed, as my hens get on the nest to lay during the stated season, that they are reluctant about settling down on the chilled China eggs, which I use as nest eggs. Of course they must look forward to the laying event as a punishment, and therefore the laying is to a certain degree checked. Now, what I wish to ask is if wooden eggs would be more desirable? If not, what would?—G. R., Calais, Me.

China eggs are as you state—terrible. Use wooden eggs covered with white muslin in winter. The hens are often made ill with the contact of the ice-cold eggs.

Prof. Corbett's Machine.—As far back as 1874 there was an incubator and brooder known as "The Prof. Ad. Corbett" affair. Please let me know if the device is still made. What do you know of its merit?—A. J. G., Chicago, Ills.

We read of it many years ago, but Prof. Corbett is unknown to us. We know of no one who is trying it, and we consider it impracticable.

Nuts for Chickens.—1. Would walnuts and butternuts pounded up be good food for chickens in winter? 2. Do eggs from pullets hatch as well as from old hens?—W. L., Cresswell, Ohio.

1. We have never seen such used, but they will serve well if agreeable to the fowls. 2. Yes, if the pullets are fully matured.

Rupture of Blood Vessel.—I have thirteen black Cochins, three Plymouth Rock hens, and one cock in a small yard. I feed, in the morning, corn and oats ground, warm, and in the evening wheat. Besides almost every day I give them some greens and grass. We get eggs every day; some days more than others, and among the eggs there are some that have some blood on them. What is the cause?—L. C. R., Marshallville, Ohio.

It is due to the rupture of a minute blood vessel, and it will heal soon. Your hens are probably fat.

Black Plymouth Rocks.—Will you please explain the breed of fowls called Black Javas. What are their good qualities, and are they good layers?—J. B., Dixie, W. Va.

They are what might be styled black Plymouth Rocks. We do not consider them of any special advantage compared with Plymouth Rocks.

Size of Brooder.—Will you please tell me how large a house I ought to have for 150 chicks when taken from the brooder? How large a yard should they have, and how long should they be kept in the house before going into the yard?—M. E. R., Monette, S. C.

A brooder one yard square, with house 6x10 feet, will answer for seventy-five chicks. Yards may be twice that size. Keep them in the brooder until well feathered.

Black Gibraltar.—What is the difference between Black Spanish and Black Gibraltar?—H. L. F., N. Andover, Mass.

We know of no such breed as the Black Gibraltar.

Value of Alfalfa.—How does alfalfa compare with clover as an egg producing food? I can get Alfalfa here in winter in nice shape, green and tender, but can't get clover.—J. G. H., Akron, Colo.

It is fully equal to clover in every respect.

MR. KINNEY'S IMPROVED METHOD.

Mr. A. W. Kinney, Yarmouth, Nova Scotia, to whom we referred in a back number as making a charge of five dollars for his method of feeding for eggs, makes an objection to our remarks, and in fairness and justice to Mr. Kinney, we acknowledge that we may have been mistaken, and at the same time we hereby apologize for what we may have stated that reflected in any manner on him. Mr. Kinney comes forward and makes known his method, writing us as follows:

I have your card of a recent date, which is one of many that has passed between us since that June squib. This one invites me to give my feed and method in a more detailed way. In reply I have to say that I had no interest whatever in writing the articles you so severely criticized in the June number other than to benefit your readers. You seem to have fully believed otherwise, and made a square objection to publishing my long letter of June 7th, which was a fair reply intended for the July number. Your ground that it was another "adroit advertisement" I do not consider was fairly taken. As you have suggested it, I will now give your readers the kind of feed that is being used, and more of the details. Your kindly heart may consent to this, and knowing that the following statements will be ridiculed from many quarters, this may be taken as a defence or excuse for not giving the kind of feed in the first place.

I have over and over again proved the new plan, and know exactly that what I say is correct. It can be shown that a flock of fowls is very similar to a machine, turn on the steam and power comes. With a hen, put into her the proper feed and eggs will come, *every time* without fail—little labor, and at a very large profit.

Having had an experience of seven years in the feeding and management of poultry, and seeing the effects, with the results, of all kinds of food now used, I may be excused for having a most decided opinion on these matters.

I find that there is nothing that will equal the exclusive use of *meat and bone*, and very little of anything else is fed.

I have just had constructed a fine large windmill, of about one-horse power in a good breeze, This is attached to the side of a cookhouse, and running power is given to a bone cutter, emery wheel (for grinding the knives and keeping them sharp), and a large meat chopper. This is all of the machines that are necessary on a large poultry farm. Once a week a butcher brings me all of the cast off parts of the animals he kills. This is thrown into a large pot, over a furnace, and thoroughly boiled. The meat is run through the chopper, drops into a long trough, when with a hoe it is mixed to a dry crumbly state, dished into pans, and is ready for feeding. The bones are cut up and mixed in the same way in the trough.

I have forty hens now laying. If I want twenty-five or thirty eggs a day, for a week or more, to fill private customers' orders, I give all the meat they will eat at four o'clock, and for the next morning a pan of bones, all they will eat. The eggs come just as is wanted. If trade is a little dull, and eggs piling up ahead, the hens are only fed once a day at 4:00 p. m.

To mix with the meat and bone I use a combination grain called "moulie." It is four grains ground together, wheat, oats, barley and peas. It is far superior, in my opinion, than middlings, shorts, bran chopped feed or corn meal. Experimently, I have used all of them, and their value is considered very low. Especially the latter—corn meal—which is but very little better than saw dust. The "old fogies" can snicker all they like, as I do not expect *them* to admit anything new. But I *know what I know*, and others can try it if they choose. I have now over 200 chicks, of all ages. These get the same feed as the hens, only more of it, fed every two hours. A small holed plate is used in the chopper for the chick feed. A quarter inch is about right. For the hens a half inch is the proper poker.

The chicks get nothing but this feed from the word go, from the shell to henhood. No chopped egg or bread crumbs squeezed out of milk; no soft feed or warm mash in the morning; no grit, sand, or other bothering stuff to prepare; no disease, no featherless chicks, and very little trouble indeed to raise them.

When I find the hens getting broody, as they do when forced a little too much, they are put in a house by themselves and fed on nothing whatever for seven days, or, until the "cluck" is all gone. Water is given but no food. Here is a great saving, as very few people will believe that a hen can exist for seven days without food. I have kept them shut up for fifteen days, and when let out they would fight every hen in the yard before eating anything.

After being shut up for a week they will start to laying in a week longer if kept well fed on meat.

Only a few days ago I bought a large cow that had broken her leg, cost fifty cents, and will last for three weeks. I corned the carcass and will cut up when the wind blows, or as is needed by hand. The machines are rigged to run by hand as well.

When another improvement of leading the water from a tank in the cook house over the well is made, which will be fed by a force pump, with the windmill and the water led to each of the houses by a pipe, to which is put a faucet over a water dish, then the labor of attending to 500 fowls will become a mere picnic.

During the summer the meat and bone has to be cooked and mixed twice a week, but in the fall and winter only once a week is all that is necessary.

I do not wish to revolutionize the present methods of feeding and management, but only to show that about ninety per cent of the labor usually given to hens is little better than thrown away. The results do not pay for the trouble and annoyance. For instance, the soft, warm mash in the morning, or any other time in the day, is a great big humbug. Gentlemen, you are wasting away your life in a laborious pull for results. Try a new plan. The results will be better—a life worth living—as regards to the raising of poultry. To those who are successful in the old methods, O. K. These remarks are to those who have become discouraged at the ill results of the present methods The writer has been there a lot of times, and knows exactly how you feel.

I might say, in concluding, that for grain I use a mixture of oats, peas and beans, about one third each. This is thrown to them in the day time. Now and then a handful also in a scratching heap. Sometimes for days they do not get any, and now and then a morning meal is given of grain. As a general thing they get nothing in the morning whatever.

My flock commenced to moult in the middle of June, this year, and are getting pretty well along now. I do not find any difference in the laying only that they want more food—fully double what is fed in fall or winter. I have hens that are getting very ragged, that lay right along. The moulting keeps the fat off and actually puts them in better laying trim.

From twenty to twenty-five pounds per day, for the forty hens now laying, of meat, is about the right thing. Some days they get a little less and others more. Of bone, they get all they can eat every day. This is my feed and this my management, from which can be shown better results than any method now in use. Yesterday, August 1st, I picked up twenty-seven eggs from thirty hens, the other ten being in the broody house, and all of them were more or less moulting.

In the above Mr. Kinney makes his method plain. While meat and bone has been recommended by us for years, yet we must give Mr. Kinney the credit of *detailing* his method of feeding. He gives the *how*. He does not allow the hens to become over fat, as he does not hesitate to "*starve* them down," keeping food away for a week, or even two weeks.

Mr. Kinney, in the above, states *how much* to give, when to give, and the results are expected in advance. As the moulting hens also lay, he saves three months of lost time in the year. Altogether the claims made by Mr. Kinney are broad, and the results remarkable, but as he has nothing to gain whatever by giving us his method we believe his statements correct. In fact, we well understand how the results can be obtained, for we have always maintained that if eggs are desired the hens must have meat and bone, and must not be overfat, but Mr. Kinney has *demonstrated* that the results can be obtained, and that labor is saved also. We cannot refrain from extending to him our thanks for his letter, which is given in full, as he wrote it.

A KICK ON PIGEONS.

Mr. T. M. Castles, Brooklyn, N. Y., comes out boldly in favor of the pigeons, and holds us to account for not giving more pigeon literature. He says:

"I am not a poultry keeper, have no inclination to keep poultry for profit, and therefore I have nothing to say about poultry. But, as I am a POULTRY KEEPER subscriber, I hope you will listen to what I here say without taking offence. In your paper you ignore pigeons. I cannot understand how a poultry paper can ignore anything that wears *feathers* (tar and feathers excepted), from a canary bird to an ostrich. I believe there is as much money in pigeons, properly kept, as there is in chickens or ducks, with no more cost, and with a great deal less care and labor. And if the *modus* cannot be taught any other way, I think you or some other enterprising citizen should start a paper exclusively on pigeons. Or, what would be better still, a paper on the feathered race in general."

In reply we will state that this is a *poultry* paper exclusively, and we see no connection, in any manner, between poultry and pigeons. The eagle, vulture, hawk, owl, ostrich, sparrow, and other birds, have *feathers*, but we are not advocating them. The sooner the poultry papers drop pigeons, tailless cats, pug dogs, warbling canaries, and *pets*, the sooner they will make the poultry business more *respectable*. We are not surprised that there is no superintendent of the *poultry* department of the World's Fair, for poultrymen themselves, at their shows, take in howling dogs, mewing cats, and braying donkeys, which is anything but creditable.

We have repeatedly called attention to the fact that there are *pigeon* (not poultry) papers devoted entirely to pigeons, such as *The Fancier*, of Baltimore, Md., and we are willing for pigeon papers to have a clean field for work, as we do not propose to get into their territory.

The pigeon is a nuisance to poultrymen. It flies to other yards, steals grain, distributes lice, scatters disease, and is about as much connected with *poultry* as a brass door knob is to the steering apparatus of a Brooklyn ferry boat.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, where by each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

VOL. X. PARKESBURG, PA., OCTOBER, 1893. No 7

CONTENTS.

An Incubator and Brooder House, (Illustrated)—How Much Feed for a Flock—He Can't Afford it—Fattening the Turkeys—Bakers Refuse. 97
No Roosters Wanted—Small Gains and Profits—The Family Home Market—The Breeds to Select—Poultry as Insect Destroyers. 98
Movable Roosts, (Illustrated)—The Poultry at Fairs—A Loss Sustained by All—About Feeding Chicks—Crossing for Breast Meat—Cut Straw and Eggs—Wire Fence in Winter—One Breed Only. 99
Making a Hen Sit—How Much—Diseases of the Throat—It is not Cholera—Truth on White Langshans—Kerosene on Roosts—Roup and Gapes—The Poultry Shows—Preserving Eggs—The Leghorn Fowls—The Cost of Animal Food—False Economy—Moulting Hens. 100
Moulting Hens: Laying Pullets—Success and Advice—Gets Puzzled Over Advice—The Duck Business—Cheap Poultry House Window—Continues to Criticize—Incubator Experience—Likes Insect Powder Best of All—Broody by Fattening—Insect Powder not Injurious—Visited "Uncle John"—Lice the Great Drawback. 1
Brief Remarks from Readers: Insect Powder not Injurious, Homœpathic Remedies, In for the War, Very Early Laying, Big Turkey Trade, Hatching With Moisture, Wants Information, Well Worth $5, Uses Insect Powder, A Good Hatch, Cure for Gapes, More Powder Experience, Lime Water, Insect Powder Again, Uses Natural Gas, A Grand Hatch, Good Weight: Cholera, Bought Lice With the Farm, Has 3000 Chickens, A Louse Remedy, Leg Weakness, Creasote for Roup, Success for Thoroughbreds—Keeping Ducks and Geese—Keeping the Bill of Fare—How Much Food to Give—Broody Hens. 102
Standard for the White Wonder Fowls—How Much to Feed—What About Those Prices—Black Comb—Eggs Will Pay—Warmth in Brooders—Keeping Food Before Fowls—Operating the Incubator—Management of Guineas—Care of Chicks in Brooders—The Waste of Poultry Manure. 103
Editorial Items—A Word to Commission Men—Commission Merchants—New Breeds—All About Broilers. 104
McFettridge's Duck Book—The Northern Middlesex at Clinton—Profitable Poultry Farming—Top Ventilation—How it Strikes Us—Albinos Among Animals—Death of Francis A. Mortimer—Moisture for Eggs—The Grand Kingeringum—Bumble Foot. 105
Scaly Legs in Fowls, (Illustrated)—Black Javas to the Front—A Microbe Killer—Hardiness in Breeds—Crossing With Wyandottes—Sending Eggs to Market. 106
Resting Eggs for Hatching—Hot Shot at the Fancy—The Drain of Feather Growing—Over Production of Poultry—Shapes of Eggs—Warts on Chickens. 107
More About "No Roosters"—Something for Mr. Kinney—Bone and Clover—A Trouble With Chicks—Does it Destroy the Purity?—Crossing for too Much—Rose-Comb Black Minorcas—Artificial Incubation in China—Eggs. 108
The Largest and Handsomest Railroad Terminal in the World. 109
Just What We are Trying—Poultry Houses—Lettuce for Poultry—Leg Weakness—Deserted Eggs Hatching—Advertisements. 110
Advertisements. 111
Bureau of Information—An Experiment in Feeding Poultry—Soft-shell Eggs—Poor Selling Poultry—Damage by Hawks—Rapid Feathering of Chicks—Publisher's Department. 112

A FEW CONDENSED HINTS.

When your hens get sore feet, or have bumblefoot, it means that your roosts are too high.

Use pure-bred cocks always. A mongrel does not pay, and causes loss of time.

Feed sulphur sparingly, as it will cause rheumatism or leg weakness. Never give it in damp weather.

Never bring a hen from another yard into your own, or you may introduce lice and disease.

Give water to chicks so as not to allow them to get their bodies wet, as dampness is fatal to them.

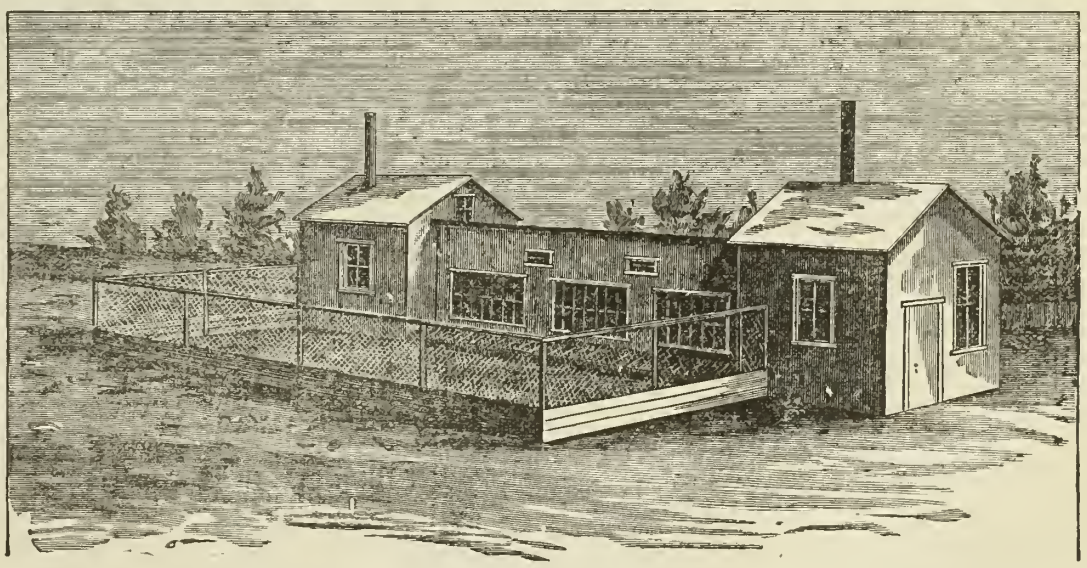
A mixture of two parts of lard and one part of kerosene-oil will remove the rough, scabby formation on the legs of fowls.

Always have your nests removable, and kerosene the roosts (under the upper sides) once a week.

Mating for the show-*room* and mating to produce show-*birds* from prize winners are different.

AN INCUBATOR AND BROODER HOUSE.

The illustration shows an incubator house (at the left) in which incubators are operated, and in which a stove for heating water is arranged, from which, if preferred, pipes may extend to the brooder-rooms for warming the brooders. The brooder-rooms are in the shape of the shed portion, with large windows in front and small covered runs extending out beyond the windows and below them, glass being used to protect against cold and to admit warmth and light. A large yard is also attached. The building at the right may be used as a feed and store house, or for occupancy by the attendant. The buildings may be of any preferred size.



AN INCUBATOR AND BROODER HOUSE.

HOW MUCH FEED FOR A FLOCK.

How much feed for a flock is one of the natural inquiries from those who are inexperienced, and, as the *N. H. Mirror* states, the problem is not yet solved. Experiments that have been made with grain show that while some hens will thrive and give good results on four ounces of grain per day, other hens require eight ounces, although each hen was allowed all of the food that she could consume. At four ounces per hen for each day in the year the grain would amount to a fraction over ninety-one pounds per year, or about six and one-half pecks. This estimate is for grain only, which of course is an imperfect food, but it represents the total amount for the year, based upon the experiment made for a sufficient period as a test, while the test demanded that the hens be fed as much as they would consume, which is not the course pursued by poultrymen.

If some of the hens ate eight ounces daily without giving any advantage correspondingly to the owner, it is safe to state that such hens are not as profitable as the others, and it is to the matter of the consumption of food that the farmer should give some attention. He cannot do so as long as he feeds his hens together, without first knowing their peculiarities and characteristics, and unless he uses pure breeds he will never secure uniformity. There may be a difference in some respects between hens of the same breed, but it is insignificant compared with the variation when the flock is composed of common hens, and which are large, small, and of all shapes and colors, no two of them being alike.

The fact that some hens consume so much more than others is not favorable to feeding from troughs, as it is better to scatter food over a wide space and compel the hens to hunt for the grain. In this manner those that eat but little take their share and leave the others to continue at work. If fed from troughs the greedy hens will rob the timid ones. Laying hens should also be separated from the non-layers, and chicks should not be fed with the adults. To attempt to estimate the amount to feed is of no consequence. A variety should be allowed, and as some hens will have a preference for certain articles all will be satisfied, as the food not relished by one hen may be accepted by another. When grain alone is fed it is the most expensive of foods.

HE CAN'T AFFORD IT.

A gentleman at Rochester, N. Y., wrote us a four-page letter, asking us which breed is best for his climate, and desired other advise which would be beneficial to him. What we noticed particularly was this, which he wrote also.

"I would like to subscribe for the POULTRY KEEPER, but times are so hard that I cannot afford it."

We find no fault with the above. The writer was honest. But if he is interested in poultry he can afford to pay fifty cents for a whole year's subscription. In fact, he *cannot afford* to do without it, as one single number may be his fortune. It would pay him to lop off fifty cents anywhere but on the paper. It is plain that in simply asking us the questions he spent two cents for postage, and another cent for envelope and paper, and the two cents return postage making five cents, with the time and labor of writing, which is worth something. And then *we* had to write, and also provide the materials. After all that was done he had received but a mite of the information that appeared in each issue.

We admit that during hard times even fifty cents is often difficult to procure. We have experienced that hardship ourselves in times gone by. But the gentleman can get the paper six months for twenty-five cents, or from the news stands each month for five cents.

Hundreds have ventured into poultry, spent dollars, and yet failed because they attempted to save fifty cents (not as much as five cents a month or a cent a week) on a poultry paper. They could not afford it—could not afford one cent a week. Yet they will sit down and write four pages to ask questions that are answered, over and over again, in every issue.

Whatever you do stick to your paper. One article, just fitting your case, may be worth a thousand dollars to you.

FATTENING THE TURKEYS.

The turkey will not fatten if closely confined in a coop. For a few days it may gain in flesh, but after that length of time it will lose in weight, no matter how well fed, as it will worry and fret for liberty. The proper way to fatten the turkeys is to begin about a month before the time fixed for marketing them, and feed them early in the morning and also when they come up at night. In the morning give them all the wheat they will eat, and at night give corn. Give them full liberty on the fields.

BAKERS REFUSE.

Stale bread, crackers, cakes and such may sometimes be procured at but little outlay, and may be safely utilized for fowls, chicks or ducklings. It is not advisable to feed the refuse exclusively, however, as a variety of food is important, but it may be used in place of all kinds of grain with advantage, compared with its cost.

NO ROOSTERS WANTED.

Hens Will Lay More Eggs Without the Presence of Males—Feather Pulling — Daily Food—Mr. Wheeler's Experiments.

Mr. W. P. Wheeler, of the New York Agricultural Experiment Station, Geneva, has completed another valuable experiment, thus adding more to the light he has given in the past. Mr. Wheeler is one of the most careful and industrious of experimenters and his work is worth thousands of dollars to poultrymen. We give only a condensed table of the many, to show how much food he gave daily to one lot of ten hens. Also, we present what he states in regard to feather pulling. The bulletin sent out by Mr. Wheeler will enlighten others, and we are pleased to notice that his experiments confirm our own. No males are required with laying hens unless the eggs are desired for hatching purposes. But here is the bulletin from Mr. Wheeler:

NO MALES.

Although among experienced poultrymen hardly any recommendation seems to be more generally accepted than that of keeping no male birds except in the breeding pens, the question is very often asked whether hens will lay well when kept away from males. Occasional letters from men, who have kept and raised fowls for many years, calling attention with some surprise to the fact that pens of hens without a cock had laid as well as those with one, show also that there is considerable belief in the necessity of keeping a male bird with laying hens. It is common to find, even where but few hens are confined in small yards and no eggs used for hatching, one or more cocks, and some owners have expressed their great annoyance at the crowing of a cock kept with hens near the dwelling but which was endured for the sake of having fresh eggs.

THE PENS AND ARRANGEMENTS.

In order to furnish some information in regard to this question of the relative egg production of hens kept without and with male birds it is thought worth while to give in bulletin form some results obtained in feeding four pens of laying pullets during eight and nine months. The pens for convenience were numbered 5, 6, 7, and 8. Pen 5 contained during most of the time seven pullets and a cockerel, and pen 7, most of the time, eight pullets without a male. Pens 6 and 8 each contained eight pullets part of the time and ten pullets most of the time and with pen 6 a cockerel was also kept. The pullets in pens 5 and 7 were Indian Game—Buff Cochin cross and in pens 6 and 8 were Black Minorcas and Light Brahmas. The Light Brahmas and the pullets of Indian Game—B. Cochin cross were selected from a lot of chicks hatched and grown to supply cockerels for caponizing. The Minorcas and Light Brahmas were from high grade stock so far as "standard" requirements are concerned but were not very good layers. The egg yields, however, are only comparable among these four pens of fowls which were in the same house and received similar rations and treatment. The somewhat close confinement necessary in any trial where a careful account of the food is kept of course always makes the conditions more or less unfavorable for the largest egg production. No attempt was made to force laying and broody fowls were allowed to sit at will, there being plenty of nest boxes in each pen. About the same number became broody in pens having male birds as in those without. Some from pens 5 and 7 were removed long enough to hatch eggs but were fed while out of the pen the same as those remaining, and were returned to the same pens from which they were taken.

All these pullets were separated from all male birds when immature and some months before any began laying. Those in pens 7 and 8 were kept away from males thereafter and during the time for which these records are given. Male birds were put with the pullets of pens 5 and 6 nearly two months before any of them began laying. The pullets in pens 5 and 7 were from the same lot of chicks and were under exactly the same conditions up to the time of selection for this trial. Those in pen 6 were also from the same lot of chicks as those in pen 8 and had been under the same conditions. Some of the pullets in pen 7 began laying about a month earlier than any in pen 5 and some of those in pen 8 from one to two months sooner than any in pen 6. The records given in accompanying tables include the larger part of the laying season and show what differences there were in results.

THE PULLETS LAYED RIGHT ON.

The pullets in pen 7 laid about 22 per cent. more eggs than those in pen 5 (34 per cent. more *per fowl*, cockerel in pen 5 counted) and although the consumption of food was somewhat greater per fowl for pen 7 the cost of eggs produced was nearly 30 per cent. less than for pen 5. During the first three months for which records are given pen No. 8 also produced 32 per cent. more eggs per fowl than pen No. 6. After this the yield fell below that for pen 6, owing doubtless to the confirmed habit of feather-eating which had been purposely allowed to develop unchecked in pen 8 (reference to this will be found later). The total yield for the eight months, however, was about the same, calculated to the average per fowl, for pens 6 and 8, slightly in favor of pen 8. The consumption of food was enough greater in pen 8 to make the cost of eggs produced slightly exceed that for pen 6.

HOW THE LOTS WERE FED.

These fowls were fed mixed grain, wheat, fresh bone, corn-silage and alfalfa forage. Oyster shells were kept in the pens and a box of dust. Coal ashes were in the yards and fresh water at all times available. The mixed grain until June 16th consisted of two parts corn meal, two parts ground oats, one part wheat middlings, one part linseed meal (old process). After June 16th the mixed grain was composed of one part each of corn meal, linseed meal (old process) wheat bran, wheat middlings, ground oats, cotton-seed meal, gluten meal and crude gluten (high grade). To every twenty pounds of this mixed grain, one ounce of salt was added and thoroughly mixed. This was a very highly nitrogenous mixture and was fed so soon as warm weather began, with the expectation that it might assist rapid and early molting, which it probably did, as most of the fowls had new feathers by September. The average per cent. of moisture for each food was mixture No. 1, 12.9 per cent., No. 2, 10.5 per cent., wheat 12.0 per cent., corn silage 70.0 per cent., alfalfa forage 78.2 per cent., and fresh cut bone 29.7 per cent. up to March 24th—40.3 per cent. March to July, and 32.6 per cent. after July.

THE FOOD PER DAY.

Although there was a variation at all times, the following gives some light on what each hen was allowed daily.

Total food per day,	3.65 oz.
Total mixed grain,	1.17 oz.
Total wheat,	2.11 oz.
Total fresh bone,	.25 oz.
Green food,	.50 oz.
Total weight of eggs,	7.23 oz.
Total number of eggs,	3.57

The figures show percentages. Hence, .25 oz. bone means a quarter of an ounce, and .50 of green food is half an ounce, while 3.65 ounces of total food eaten means three ounces and sixty-five one hundredths of an ounce. We mention this for the benefit of some who may not understand. The above, however, is not exact, as food varied for each lot of hens.

OBSERVATIONS ON FEATHER-EATING.

During the winter the vice or habit of "feather eating" made its appearance in Pen No. 8, and at first only one or two of the fowls were inclined to this. As the ration at the time was such as has not appeared to be unfavorable to other fowls, and contained an average of one-fourth ounce of fresh cut bone and meat per day per fowl, the habit was allowed to develop and no attempt was made for some time to check its spread, until, after a few weeks, every fowl in the pen had acquired the habit or was suffering very conspicuously from it. After this habit had been very seriously prevalent for some weeks vaseline or lard (sometimes one and sometimes the other), in which had been mixed powdered aloes, was applied to the old feathers near the spots which had been picked bare and on the new feathers which appeared. After continuing this treatment for some time the habit apparently disappeared, so that the birds were enabled to grow a full coat of new feathers. No change of any consequence was made in the food, etc., and the suppression of the habit was probably due to the disagreeable taste of the aloes. (An extract of aloes would probably be better where grease on the feathers is objectionable.) The means taken to discourage this habit necessitated frequent handling of the fowls and would not pay with ordinary stock. It would be more economical to kill the birds first affected.

It does not seem probable that a ration especially deficient in some constituent is always the cause of this trouble, for in this case four pens of fowls were fed alike and the habit developed in only one, and was afterward suppressed in this pen without any radical change in the food. The habit appeared, developed and had begun to disappear during the few months in which almost no change was made in the composition of the ration. During this time quite a liberal amount of fresh cut bone, containing considerable lean meat, was fed. Before this even a larger proportion of fresh bone had been fed.

The most apparent cause for the development of this habit was idleness, to some extent consequent upon the necessary confinement of the fowls, although they all spent a fair portion of time scratching for their grain in the straw which covered the floor of the pen. This habit, however, which may sometimes be a "symptom" of disease, is more often, perhaps, induced by improper food, lack of animal food, or lack of variety in the ration. A pen of laying hens, fed at this station about two months almost exclusively upon Indian corn and cornmeal, picked not only the feathers but the flesh from each other so that two were killed. This same trouble has been seen elsewhere when birds were closely confined with little chance or inducement for exercise and no change in food. A pen of young Capons and "Slips" were fed for about two months exclusively on corn and cornmeal (plenty of fresh water being at all times available), and they picked nearly all the small feathers from each other. An entirely similar pen, fed at the same time a mixed grain ration, continued in perfect plumage.

GENERAL OBSERVATIONS.

A pen of pullets kept without a male produced eggs at about 30 per cent, less cost than an exactly similar pen with which a cockerel was kept.

Another pen without a male gave during the first three months about the same proportionate excess of product over an exactly similar pen with which a cockerel was kept. After the development of the feather eating habit the egg product diminished, but during eight months the total egg yields for each pen were very nearly alike.

In each of the two pens without male birds some pullets had begun to lay from one to two months earlier than any in the corresponding pens in which male birds were kept.

While "feather eating" usually appears after feeding for any length of time an unvaried ration deficient in some constituents, more especially nitrogenous matter, the habit has developed from idleness or some unknown cause among fowls having a ration which gave satisfactory results with other similar pens of fowls fed at the same time.

While the habit of feather-eating can be cured sometimes by a needed change of food and sometimes by methods similar to that mentioned in this bulletin, no method which necessitates frequent handling of fowls will be an economical one with ordinary stock. The vice is very uncommon among fowls that have exercise and a variety of food, and it is most economical to prevent its appearance by careful feeding, but as the spread is rapid even under a ration which does not ordinarily seem to encourage its development the vice should be stamped out by the death or removal of the first offender.

We believe that the above will be of interest to each and all readers, as the information is derived from practical experiments undertaken with the object of making discovery.

SMALL GAINS AND PROFITS.

The fowls are small compared with the animals, but they gain proportionately in weight and pay for the food consumed. If a fowl weighing six pounds makes a gain of one pound it is exactly proportionate to the gain of one hundred pounds in a steer that may increase in weight from six hundred to seven hundred pounds, and a steer will require more room than will one hundred fowls. By the use of a pure-bred male in a flock of common hens the farmer may add an additional pound in weight to all poultry hatched from the cross. If he has one hundred of such birds he has gained one hundred pounds by improvement. It is more important to improve the poultry than the animals, especially when the flock is large, as a gain of two eggs only per month, or even only a half pound of weight in the carcass, may amount in value to a large sum in a year. To show what can be done by the use of pure-bred males we selected two medium-sized common hens, full sisters, and mated one of them with a Plymouth Rock male and the other with a scrub male, hatching eggs from both hens for comparison, selecting the cockerels (six of each) for experiment. When they were six months old they were weighed. The half-bred Plymouth Rock cockerels averaged nine and one-fourth pounds each, and the others seven and one eighth pounds. Both lots were fed alike (all being together), and were fed very heavily in order to force them in growth. There was over two pounds difference in weight, or twenty-five cents gain, at twelve and one-half cents per pound. Had we raised two hundred of the cross-bred chickens there would have been a gain of $50 by using the pure-bred Plymouth Rock, and yet he did not cost but $2. The pullets from the cross were also larger than the others, and were much better egg producers. Gains from poultry may appear small, but they are really large when we take the percentage of gain into consideration.

THE FAMILY HOME MARKET.

If the markets are dull and prices low, the cheapest place to sell is at home. It pays to raise chickens for the family table. When poultry and eggs are consumed at home there are no transportation expenses, no coops for shipping required, no hauling to the depot, and no commissions to pay for selling. There is no reason why a farmer should pay fifteen cents, or more, for beef and sell his poultry for less, nor should he be content with pork and potatoes when he can have poultry on his table.

Poultry on the farmer's table is more wholesome, and a greater luxury, than the poultry on the tables of the consumers in the cities, as the supply sent to the city markets is not always of the best quality, much being consumed that is very inferior. The farmer can select the choicest and best for his use, and can have it in a fresh and wholesome condition.

The home market is the best and most important. The farmer should sell only the surplus, and not allow any poultry or eggs to be sent to the cities until after his own wants are supplied. It will be a saving in some other direction when poultry is used, and the family will enjoy the gathering around the table when the diet is more varied.

It is not advisable to overlook high prices. The farmer is wise to sell his poultry when he can get good prices. It is not proper, however, for a farmer to sell at a sacrifice when he can find a market on his own table. The home market is always the remedy for low prices. When there are one or two fat hens that do not lay, it will not pay to ship them, but it pays to eat them, and save the cost of their food. Young fowls that will not mature in time to lay before winter, and which take up room that the laying hens should have, will do more service if used on the table than if retained. The surplus should be reduced before winter, in order to save expenses.

THE BREEDS TO SELECT.

As the spring is the time for buying eggs of the pure breeds, it will not be out of place to give a few words of advice to the new readers and to those who are not familiar with the breeds. First, have some object in view. If you prefer a breed that lays a great many eggs, do not expect to get good table qualities in the breed at the same time. If you desire a choice table fowl, do not expect great layers among such.

If you have no range, and are compelled to keep your birds in confinement, you should select breeds that are contented in confinement, and which cannot fly over a fence, as the Brahmas and Cochins. But do not overfeed them, but make them scratch and work in litter for all they receive.

The non-sitting breeds lay eggs that are pure white in color. They do not sit unless made excessively fat by high feeding. They can fly over a fence, and thrive best on a range. They are the Leghorns, Hamburgs, Houdans, Black Spanish, Minorcas, Polish and a few others. The Minorcas and Houdans are larger than the others, and the latter is also a fine table fowl, but the hens do not lay heavily in winter.

The Dorkings, Indian Games and the Pit Games are the best breeds for the table, but the chicks are tender. The hens are fair layers, but do not equal some other breeds.

For hardiness, market and what may be termed "general purposes," the Brahmas, Cochins, Wyandottes and Plymouth Rocks are considered equal to any. The two latter do well on the range (and in fact, all breeds do best on the range), but they also endure confinement. They are not the best laying breeds, nor the best fowls for the table, but they will probably give as large a profit as any other breeds when poultry, eggs and broilers are produced.

POULTRY AS INSECT DESTROYERS.

The hens, geese, turkeys, ducks and guineas perform more service in the destruction of insects than may be supposed. Not only are the insects sought on every spot where they may be hidden, but they are scratched in out of the ground, and brought to the surface. The guinea and turkey are destroyers of the insects that infest the fields, and a few moments observation will convince the farmer that they are valuable aids to him. The distended crop of a fowl will contain half a pint of the substances eaten, and in many cases a large proportion is of insects. The crop is filled several times during the day, and if we give credit to a large flock it will be noticed that many bushels are consumed in a week. All classes of poultry prefer insects to other foods.

MOVABLE ROOSTS.

While the designs of movable roosts illustrated in this issue may not be serviceable to some, yet they may convey "an idea" to those who have only a small flock, with limited space in the poultry-house. With one exception, they are movable, so as not only to be placed at any point in the poultry-house, but to allow of carrying them outside to be cleaned.

The "elevated roost" (Fig. 1) is arranged with a high and low bar, the latter

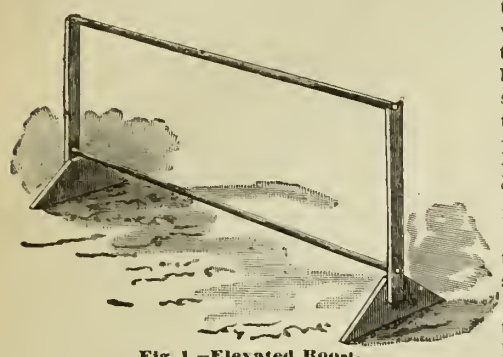


Fig. 1.—Elevated Roost.

to accommodate such heavy hens as the Brahmas, which cannot fly. A bar may also be placed in the middle, between the upper and lower ones, if preferred.

The "post roost" (Fig. 2) is intended for such breeds as Leghorns. The post may be high or low, according to preference, and only one of the cross-pieces may be used, if desired, according to the size of the flock.

The "barrel roost" (Fig. 3) is simply a square frame nailed to the top of a barrel, and is suitable for the little bantams. As they will naturally face outwards, the barrel will serve admirably as a receptacle for the droppings, both from the fowls and also from the sweepings of the floor.

The "flat roost" (Fig. 4) is intended to show not only a low roost (which is to be preferred for large fowls), but the dotted lines indicate that the roost (B) may be raised during the day, occupying an upright position against the wall of the house (A), to be lowered at night to the floor.

The "coop roost" (Fig. 5) is in the form of an open coop, being simply a movable frame, the hens occupying the top, or utilizing the lower rails on each side also, if the flock is large. For a small flock the middle rails may be omitted.

The designs are intended as cheap contrivances to save space in the poultry house, as the roosts may be removed in the morning and replaced at night. It is hoped, however, that each reader may improve them to suit the convenience of his poultry house.

THE POULTRY AT FAIRS.

As the fall fairs will soon begin, it is not improper to call attention to the fact that the poultry department is one of the most attractive, being visited by men, women

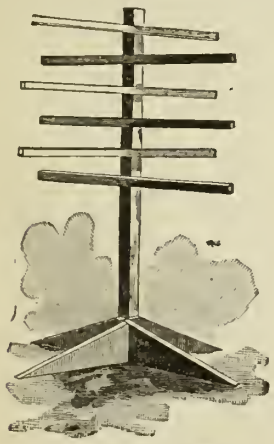


Fig. 2.—Post Roost.

and children, and as a large number of those living in the suburbs of cities are interested in poultry, it is always an advantage to have a large display. It has been the rule to place fowls, rabbits, pigeons and pets of all kinds in the same building, a method that does not show that recognition of the poultry industry that it deserves, for the pure-bred fowls are not pets, any more than are cattle, as they represent a special class of stock.

While desiring to encourage high premiums on all crops, and especially to selected specimens of fruits and vegetables, yet the offer of $5 for the best head of cabbage or the best bushel of potatoes, and $2 for the best pair of fowls, is not very encouraging to the breeders of pure-bred poultry, as the cabbage may be easily boxed and shipped to the fair at a small cost for expressage, while the breeder of pure-bred fowls must provide an attractive coop and also pay double express rates, the expenses of reaching the fairs sometimes being greater for a single pair of pure-bred fowls than the value of the premium offered, which must be won under competition. It is more troublesome to ship live stock of any kind than to ship specimens of produce, and the express rates are always "double rates for fancy fowls."

A consideration of the facts by fair managers will show that the breeders of poultry cannot afford to exhibit at some fairs, owing to the expense being greater than the awards, and any encouragement given the poultry department will no doubt lead to satisfactory results, not only to the exhibitors, but also to the fair managers, as the public will appreciate large displays.

A LOSS SUSTAINED BY ALL.

The heaviest loss is with the chicks before they reach the age of three months, and the experience of nearly all of our readers may be expressed in the words of a lady subscriber, who writes us as follows:

Fig 3.—Barrel Roost.

"I have raised chickens for fifteen years, using hens to hatch them, and while I usually succeed in securing four or five hundred chicks every year, I seldom raise over one hundred of them. They have free range. I now wish to use incubators and brooders."

When we consider that not one chick in four that are hatched goes to market, it shows a loss of something else than chicks for it takes at least four eggs to produce four chicks, and the loss of the time of the hens is an item also. The loss in summer is not to be compared with the loss that occurs after the warm season has passed, and when the nights begin to become cold. It is not the exposure during the day that causes the loss so much as the cold at night.

How is it that the farmer loses three chicks out of every four that his hens hatch? It is due, in the first place, to his not giving them proper attention. He leaves such work to his wife, while she is too busy inside the house to know what is occurring to the chicks on the range. The rats and hawks get a large share, but the greater number are eaten by the family cat, and by the very cat that eats out of the same dish with them. She knows enough not to touch a chick until night arrives, and she then becomes a beast of prey, as she really is.

Will it not be to the interest of the farmer to try and save all of the chicks that are hatched? We believe it is profitable not only to afford harboring places against the hawk, but also shelter against the rains, and to see that the chicks are safe in their quarters at night. It is cheaper to raise fifty chicks from seventy-five eggs than to allow four hundred eggs to be wasted for incubation, only to send one hundred chicks to market. A live chick is worth two eggs, and should be saved.

ABOUT FEEDING CHICKS.

When feeding the chicks, always keep in view two essential points—growth and

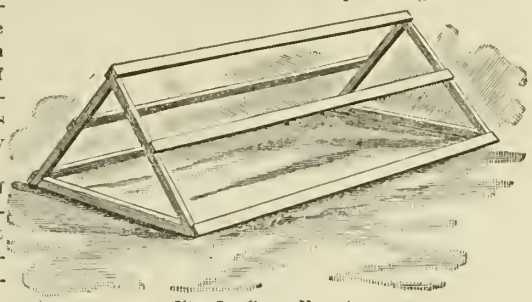


Fig. 5.—Coop Roost.

warmth. Unless the chicks grow rapidly, they will not give as large a profit as they should. To make them grow, the food should be composed of the elements that produce bone and flesh. As all food contains heat-producing elements, they will seldom be lacking if a variety of food is given.

Lean meat is nitrogenous. If a piece is cooked and the broth thickened to a crumbly dough, and the meat is in fine pieces, the mess will be very nourishing. Ground oats, corn-meal, wheat middlings and bran, stirred in while the broth is boiling, will add not only the bone food, but also nitrogen and carbon. This mess may be given morning and night, and the chicks should have all that they will eat at one time.

Four times a day is about the correct periods of feeding. Two of the meals may consist of cracked corn and wheat, millet seed, ground oats, or anything that they will eat. If the chicks are too small to eat wheat (before ten days old), give them two meals of scalded ground oats, first sifting the oats. Now, it is a simple process, the main object, however, being to feed enough and to observe regular hours in feeding. After the chicks are two weeks old, make them scratch for as much of the food as possible; that is, for the wheat, millet seed, etc., but feed all soft food in troughs.

Keep the chicks in a warm place, not under seventy degrees—and keep the brooder at ninety-five degrees. Always

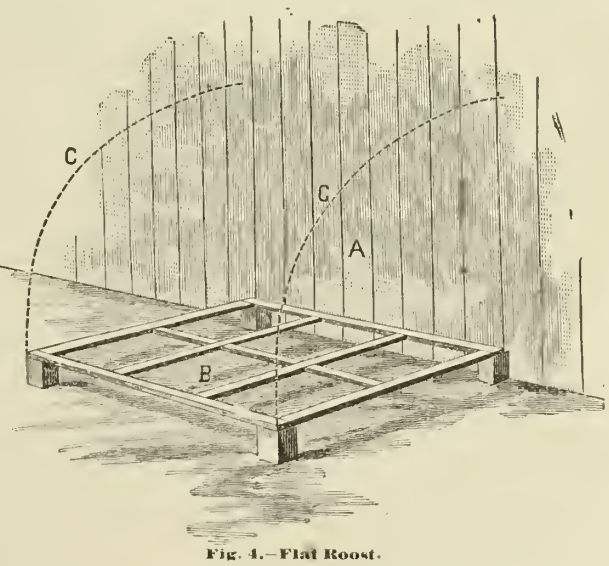


Fig. 4.—Flat Roost.

give water so that the chicks will not get wet when drinking, as dampness is fatal. Should bowel disease appear, the cause will in nearly all cases be lack of warmth, or from the chicks having been chilled at some time, and not to the food. Do not attempt any experiments with ventilation. They will get more fresh air than you can keep out. More chicks die from fresh air than from the lack of it.

CANADIAN money is good. Send it on Canadians and subscribe.

CROSSING FOR BREAST MEAT.

It is sometimes well to make crosses, but the pure breeds only should be used for that purpose—the dunghill never. While aiming for size and egg production, the quality of the carcass should not be overlooked. There is one French breed that seems to thrive well in this country—the Houdan. It has a very compact body, full breast, and the flesh is of a delicious flavor. The objections to the breed are the crest on the head, the dark legs and plumage and the white skin. The claim is that the crest becomes water-soaked in winter, and that there is a prejudice in the market against any fowl that does not present a yellow skin and legs. The Houdan also possesses five toes, like the Dorking. It is a non-sitting breed, and ranks with any of the breeds for egg production. By using the Houdan male for crossing on such breeds as the Brahma, Cochin, Plymouth Rock and Wyandotte, a superior fowl to either parent will be produced, and despite the prejudice against dark legs and white skin, the fine carcass, plump breasts and attractive appearance will make them favorites with all who may notice them. If crossed on the Langshan, one of the best birds for laying and for the table will be the result, but there will be no yellow skin, as is sometimes the case when the Houdan and Brahma cross is made.

CUT STRAW AND EGGS.

An old farmer who secures eggs all through the winter, when asked for his secret, replied that he gave his hens plenty of cut straw. For awhile there was much unbelief in the reply, as it was supposed that the farmer was feeding cut straw to his hens (according to his statement); but when the facts came out, it appeared that the cut straw was really the secret, but it was used, four inches deep, on the floor of the poultry house, in which millet seed and wheat were scattered, the hens thereby being provided with a warm place to work. The cut straw gave them a scratching bed, and it kept them in exercise, prevented disease, and promoted the appetite.

It will pay better, if the matter of profit from returns is considered, to use straw in the poultry house than in the cow stalls. Many cold poultry houses can be rendered comfortable with straw, cut to three-inch lengths, on the floor, and if the hens are warm and can exercise, the cost will be less and the number of eggs greater.

WIRE FENCES IN WINTER.

It cannot be denied that by the introduction of wire netting for fencing the cost of confining poultry has been greatly reduced, for the wire fence is not only durable but can be easily constructed. During the winter season the usefulness of the wire fence depends upon how it is arranged. When the cold winds come from the north and west the hens must remain inside the poultry-house or be terribly exposed, as the open wire does not serve in any manner as a protection. When erecting a fence this fact must not be overlooked, as much of the usefulness of the hens in the winter depends upon warmth and protection from high winds. Wind-breaks are always serviceable, but they are not easily made or grown. When wire is placed in position let it be above two feet of boards. That is, when making the fence, use two feet of boards at the bottom, not only as a protection against winds, but also to prevent the birds from pecking each other. The boards also make the fence higher and stronger, thus preventing the flyers from going over it, as well as keeping dogs from breaking through.

ONE BREED ONLY.

In keeping pure breeds, begin with one breed only, learn its characteristics and points of excellence, and you will then be better able to attempt experiments with the second. Each breed is adapted for some special purpose, and there is much to learn with only one kind. Aim to have the best, however, for one of the pleasures in the keeping of pure breeds is to excel with the breed. Go to the shows, exhibit your stock and endeavor to take some of the premiums. This will stimulate to greater effort, and to securing better stock, if possible.

MAKING A HEN SIT.

Our English cousins have some queer ideas, although they can get more eggs in a year from a flock than can be done in this country. A Mr. Poole, writing to *Poultry*, published in England, gives the following:

The continental breeders, like their English competitors, experience at times great inconvenience through the perversity of the lady fowls, who will not exhibit any signs of being broody when their services are most required. Here, again, the continental breeder gives an example of his thoroughly practicaly turn of mind. In spite of Mr. L. Wright's oft-repeated answers in *Fowls* to the query as to the best means of making a hen broody, "*that you cannot make a lady do what she has a mind not to do*," the continental breeder says you *can*, and he gives you the choice of five different methods; three, certainly, taking the form more of persuasion than of force, but the remaining two methods are decidedly of the nature of coercion. However, I leave you to judge for yourselves.

1. Leave the eggs in the nest and the hens of their own accord will take to them.
2. Feed them until they are satiated with hemp seed, and so take away from them all desire to go foraging for food.
3. Make them intoxicated with bread steeped in wine or pure cider before placing them on the nest.
4. Pluck the feathers from the abdomen and beat it with stinging nettles, which makes it long for the coolness of the eggs in the nest. This method has actually been applied to capons, old cocks, and turkey hens.
5. This method is considered superior to any of the foregoing, especially in the case of turkey hens, and consists in putting the bird into an open box exactly of her width and length and from six to eight inches deeper than her body when she is sitting. Then attach to her neck with a piece of twine a small board a trifle narrower than the width of the box, and which presses down on her back. The uneasiness which this board causes the bird is sufficient to make her keep on the eggs, and imparts to her that sort of feverishness which always accompanies incubation.

All such methods are cruel and ineffectual, except as suggested in the second paragraph, which advises feeding on hemp seed, and as such food is oily and *fattening*, it may have the desired effect. So will corn, wheat, or any other heat-producing food. Mr. Poole also states that he tried the intoxicating method but without the desired result.

Now, it seems to us that when writers recommend such methods as the above, and especially the plucking and drunkenness, they should cease giving advice. The hen will continue to lay as long as the conditions are favorable for so doing, as is shown in the cases of non-sitters and when she is out of condition, which may happen if her food is too carbonaceous and is lacking in nitrogen and mineral matter, she will cease laying and become broody.

HOW MUCH.

The difficulty of answering a question properly may be shown by the first inquiry below, which is from a reader at Alberquerque, N. Mex. The writer says:

1. How much feed ought it to take for twenty-three hens, two roosters and ten pullets. They have free range to two manure piles, and an alfalfa patch, besides having the scraps from the table.
2. Why do hens lay on the roosts and in the middle of the yard.

If we stated our opinion we would say—give no food at all. Before we can estimate how much food to give we must know exactly how much alfalfa is eaten, how much food is secured from the manure heap, and how much, as well as the kind, of table scraps is given. Where the hens have so many advantages they require no food from their owner, as they may become too fat.

The reason the hens lay while on the roosts, and also in the yards, is that they are too fat, and receive already too much food.

DISEASES OF THE THROAT.

Hoarse breathing, rattling in the throat, choking, yellowish substance in the throat, resembling diphtheria in children, and sometimes accompanied with swollen eyes, may be combined as one difficulty. It is usually due to a draft from some source, and the ventilator is more at fault than anything else. The best remedy is to swab the throat in the morning (using a feather) with a mixture of one part spirits of turpentine and three parts of sweet oil, at the same time injecting a few drops of the mixture in each nostril. At night sprinkle a pinch of chlorate of potash down the throat. Put ten grains of powdered permangenate of potash in each quart of the drinking water, and keep the birds warm. The handling of the birds is laborious, hence all sick ones should be removed from the others.

IT IS NOT CHOLERA.

A gentleman at Hillman, Ala., has been treating his birds for *cholera*. Nine persons in ten are disposed to attribute an unknown disease as cholera when in fact cholera is very rare. We wish our readers to notice the following, so as to call their attention to cholera. He says:

Will you please lend a listening ear to my "tale of woe," and tell me a remedy for my diseased fowls. I have Leghorns and Games and have lost a great many within the last month with what I suppose is cholera. The principal trouble seems to be an inactive state of the digestive organs, food remaining in the craw for several days, even after the fowl has been shut up for treatment. Yellowish green droppings accompanies the trouble. Can you tell me something to use to arouse the digestive organs?

Notice that he says—"food remaining in the craw (crop) for several days." Now, a fowl does not live several days if attacked by cholera. It will die within thirty-six hours or begin to recover. *Cholera kills quickly*. The difficulty with the fowls is that they have indigestion, probably due to lack of sharp grit and overfeeding, they also no doubt being very fat. The remedy is to give some pounded glass, or old china, and to withhold all food for four days or a week. It will be quite a long fast, but it will prove highly beneficial, however. Indigestion is often mistaken for cholera.

TRUTH ON WHITE LANGSHANS.

Mr. Varian, in the Colorado Poultry Journal, though endeavoring to call us to account for our position on White Langshans, makes use of remarks which rather confirm us in some respects. We take an extract, and would give his letter in full but for its length. He says:

"Whether the occurrence of such sports be true or false, it would not matter if the White Langshan was produced by a cross with some other white breed, if it was done by a competent fancier, and carefully selected to Langshan type from the first; all the characteristics of the outcross, except the color, and perhaps an increase of vigor produced by the blood mixture ought to be gone before they were bred to seven-eighths pure in blood."

We wish it undersood that our position on White Langshans has not been understood. What we have done is simply to strike at the men who have tried to build up a breed by maligning the character of reputable men.

If the birds can sport, as stated above, why could they not sport in the flocks of others than the men who "claimed the earth?"

Why did they not sport at first, instead of after all the white was bred away, even from the tocs?

Why did they not sport until called upon to sport, so as to boom a new breed?

Why did the sporting begin so *unanimously*, all over the country, at the same time?

Why did the dogs begin to eat each other after the innocent game was gone, each claiming to be the original sporter?

Why did they attack men whose characters were better than their own?

Why did such a mass of charges and counter charges come up in the club, some men accusing the others of fraud?

So far as we are concerned we have attacked only the men who thought that they could make money by injuring honorable men. The late Mr. Mortimer was so sensitive (as all honorable men are) that he refused longer to have a breed that induced men to become so base, and the insinuations made against him hastened his death. These men may console themselves that they did their share to drive him to his grave, and yet a purer or more honorable man never entered the poultry business. The whole White Langshan controversy was a disgrace, and killed the breed. Good men breed them, but they are not the men who have tried to rise by injuring others while their own misdeeds and selfishness were cropping out so plainly as to be disgusting.

KEROSENE ON ROOSTS.

Do not make the roosts disagreeable for the hens, as is the case when the roosts are saturated with kerosene, which causes sore feet. Swab the roosts with kerosene, carry them outside, apply a lighted match and allow the fire to run over them. The result will be that the lice will be exterminated.

ROUP AND GAPES.

Roup in winter and spring destroys the adults, while gapes in the spring and summer makes havoc with the young chicks. The difficulty in the way of curing diseases of poultry is that the "numbers" are to be met with. That is, where it would not be difficult to handle and treat one or two sick fowls, the cost of such work, in the bestowal of labor and time on a whole flock or brood, will be too great in proportion to the value of the birds; hence, in treating such diseases as roup or gapes, the only methods that can be used are such as will permit of attempting the use of remedies as a whole, and in administering them by admixture with the food or drink.

Of all the diseases which are mentioned to us by our readers, and of which the greater number of inquiries are made, the roup stands first. It is a disease which covers a great many ills, but it is used principally to designate that form of disease in which the bird really has scrofula, or tubercular consumption, not only an offensive odor resulting, but the disease is communicated to other members of the flock. Catarrh, canker, croup and other forms of diseases resultant from "catching cold," also come under the term roup. To attempt a cure means more work than can be given with the malignant roup, but the canker, bronchial affections, swollen eyes, etc., may often be treated successfully, many remedies having frequently been given in this department. The best preventive is air-slaked lime, used freely over the floor and yards. If an ounce of spirits of turpentine is intimately mixed with a peck of air-slaked lime, it will be much more efficacious. When a flock of fowls remain ill for weeks and do not show signs of improvement, the ax or hatchet should be be applied.

Gapes in little chicks is another difficulty which demands much more labor than can be bestowed on a few broods. The best ventive is the lime and turpentine, as suggested above, and if the ground is kept clean by turning the soil under occasionally, with an application of lime made at least once a week, there will be but little danger of gapes appearing. In fact, it is cheaper and better to aim to prevent diseases than to rely upon the making of cures afterward.

The work of prevention should begin early in the season. After the chicks have reached a suitable age and have been shipped to market, the proper plan is then to apply lime, spade the ground, and apply lime again. In this way disease is destroyed, and if the work is repeated in the following spring, before the chicks are hatched, the liability of loss will be reduced to a minimum, and as it is much less laborious to do this than to treat for diseases, we trust the readers will give the subject their consideration.

THE POULTRY SHOWS.

More shows are held annually by the poultrymen than by any other class of breeders. During this winter over fifty shows will be held in different sections of the country, and at some of the large shows as many as 3,000 birds are expected. It is to the advantage of the farmers to encourage these shows, not only by attending, but also by carefully observing and comparing the breeds. Shows and fairs educate the amateurs and attract the experienced. There are also educational advantages in shows that are beneficial to others than the farmers. The consumers learn which fowls are the best, and a knowledge of how to bring the producer and consumer together is advanced to a certain extent.

PRESERVING EGGS.

We have often given replies to inquiries in regard to how best to preserve eggs, and though many methods are given, yet the following rules will enable one to keep eggs from three to four months if followed:

1. The eggs from hens that are not with males.
2. Keep the eggs on racks, using no packing material.
3. The eggs should be turned half over three times a week.
4. Keep them cool, which is the most important of all.
5. Use only fresh eggs, as one stale egg may injure the others.

THE LEGHORN FOWLS.

One of the reasons for the popularity of the Leghorns is their hardiness. Of all the breeds that feather very rapidly when young, the Leghorns are the least liable to succumb, and they seem to endure as much as any other chicks. They begin to scratch for their food almost as soon as when just hatched, and this active disposition remains with them until they mature and become aged. It is claimed that if a Leghorn hen is on the range she can pick up all of her food. It must be admitted that a flock of Leghorns will search every square foot of a field and not permit anything to escape them that can be utlized.

As layers they rank as high as any breed, being non-sitters, and begin laying before they are six months old. This is a great advantage where it is too late to hatch early pullets, for if they are well fed and pushed from the start, they grow rapidly, and begin to lay in the fall before winter sets in. They will lay through the whole winter if they are kept in warm quarters. One of the objections to them is that they are not contented in confinement during the winter but if kept well supplied with litter in which to scratch, they will be satisfied. It is a breed that detests idleness, and will not thrive in a condition of quiet, ease and comfort like the Brahma.

There are two distinct kinds—the single comb and the rose comb. With the exception of the difference in the shapes of the combs, they are in all other respects alike, not only in color and size, but in characteristics. If they are overfed and are fat they will become broody, and when they are on the nest they are very good sitters, but it is somewhat rare to find one that will become too fat if the flock is on the range. The breed is one that must be well sheltered, and the food must be of a variety at all seasons.

THE COST OF ANIMAL FOOD.

There are several modes of procuring animal food for poultry. Meat and bone are almost essential to egg production, and when the ducks are laying, animal food is better and much cheaper than grain because the ducks will cease to lay if they receive nothing but grain. There are on the markets many kinds of ground meat, "animal meal," etc., the price seldom exceeding two or three cents per pound. These articles contain bone also, and are thus useful in providing lime for the shells of the eggs. One pound of the meat will take the place of two pounds of grain, which brings the price, in proportion to food value, about equal to that of grain. The cost of animal food, then, is really no more than that of grain, with the advantage of increasing the number of eggs, as well as affording the hens a more varied diet. Of course the green bones and fresh meat from the butcher should be preferred, but there are some who cannot easily procure such at all times, though they can procure the ground and dried meat in any quantity, and have a supply on hand at all times, ready for use.

FALSE ECONOMY.

The attempt to keep thirty or more hens in a poultry-house that is adaptable for only twenty, results in fewer eggs from the thirty hens than if a smaller number occupied the space. Cases are numerous where a few hens layed well, while large flocks gave no returns. The hens must be comfortable or they will not thrive, and during the warm season there is no surer method of ceasing egg production than to have too many hens together. There is no economy in crowding them, for what is gained in one direction is lost in another.

MOULTING HENS.

As soon as the hens begin to show nakedness, and also to commence dropping their feathers, but few eggs should be expected, as the hens will rest from their work until they take on new plumage. The sooner they put on their new attire the sooner they will begin to lay. The best food for them is lean meat, or fresh bones from the butcher, but as all oily foods hasten moulting of the feathers, a pint of linseed-meal may be added to their food daily, for twenty hens. Feed the moulting hens once a day, and give them liberty on the range.

MOULTING HENS.—LAYING PULLETS.

R. S. KAUFMAN, KELLY POINT, PA.

During moulting season is the most difficult time of the year for egg production. It is a well-known fact that the hen will not lay when changing her coat, and there is no season of the year that the hen needs so much attention as at this period. If she is properly fed the right kind of food eggs will begin to make their appearance in a few weeks after moulting. On the contrary, if she is neglected, the result will be but few eggs until March or April, thus losing the season when eggs bring the highest price in market. In such cases come small profits and discouraged poultrymen.

Now I will briefly tell how this obstacle can be overcome to a great extent, or at least such is my experience. The average poultryman likes pullets best for laying, and in that point he is about right. By keeping hens of different ages up to three years you can get eggs in moulting season. A yearling hen will moult in the latter part of July, and a two year old hen will moult about September, while a three year old hen will moult about October. By this can be seen that by keeping hens of different ages, we can keep up the egg supply. The year old hen will be ready for business by September, and the two year old hen will then bemoulting. Early hatched pullets will also begin about this time, if properly fed, and by the time the oldest hens are moulting the pullets and one and two year olds will be laying, thus giving a continuous supply of eggs when eggs are scarce in market.

I would not advise keeping hens beyond three years, but a great deal depends on the hen; some will be prolific layers at five years of age. In this, however, the poultryman must judge for himself. The feeding of the moulting hen is the most important part. I believe lack of judgment in feeding has caused dozens of poultrymen to go out of the business, and denounce all poultrymen, poultry papers and editors as frauds when their own stupid heads were the sole cause of the difficulty.

I have somewhat drifted from the subject of feeding. The hen needs something to stimulate and tone up her system. Feather-producing food should be given. I am a firm believer in green bone for poultry, and give my hens a liberal supply of it as often as convenient. They should have a variety of grain, such as wheat, oats, buckwheat, or barley, in moderate quantities. The thought I wish to convey is that, when a hen is moulting, you can give a stronger and larger quantity of food than when in the laying period, but of course judgment must prevail. As soon as they are over their moult, the feed should be decreased down to a laying ration, or the result will be over fat hens.

Thoroughly understanding the business is what every poultryman needs, and by telling each other how we manage our flocks, through the POULTRY KEEPER, and with the assistance of Mr. Jacobs on questions that puzzle us, we can be more and more successful in a business that promises to be one of our great industries.

SUCCESS AND ADVICE.

PETER GLEN, BELLEVILLE, N. J.

Allow me as a subscriber for two years, and an admirer for several years, to congratulate you on the proficiency to which the POULTRY KEEPER has been brought. It, and one more poultry paper which deals with the poultry business on the old lines, fills the bill for me.

I am pleased to see the name of M. K. Boyer on the paper as associate editor, as I believe he is a man of considerable experience, and we who are only beginning need all the advice from experienced poultrymen that we can get.

As I read every line of my POULTRY KEEPER, and study the experiences of others, it has struck me many times that many articles and little items would be of much greater interest and benefit if the date on which they were written was inserted. By looking at the August number page sixty-nine, last column, first item, you will see what I mean.

Another word in praise, not flattery, of the POULTRY KEEPER. By following the directions given from time to time on the raising of young chicks, I have been enabled to raise this spring some three hundred and twenty chicks, which at the present time (July 27th) are three months old (all hatched and raised by hens), with only the loss of twenty-eight by sickness and thirty-four by cats. The sick ones I did not wait till they died, but took their heads off as soon as I discovered them, and believe this to be the best plan.

I started in two years ago with three mongrel hens, bought in the market for $2.10 (the three and a year's subscription to the POULTRY KEEPER), and had lots of ups and downs that I would like to tell you of (including incubators, brooders, etc.), but I will leave that out this time as my letter is now too long. Suffice to say that to-day I have about 280 fine chicks pure, and forty hens, some of which are mongrel yet, but I will clean them all out this fall.

Just going off on vacation, taking a bundle of POULTRY KEEPERS with me.

[We accept the advice in regard to dates, and will follow it hereafter. Thanks for the suggestion. Some letters reach us a little too late each month, and hence are held over until the next.—ED.]

GETS PUZZLED OVER ADVICE.

T. R. COMSTOCK, LITTLE ROCK, ARK.

As I am a reader of your valuable paper, I want to contribute my mite to its columns or waste basket. The POULTRY KEEPER is the best paper I can read on poultry, but still I find it at times misleading. I want to go into poultry raising, so I begin to read, and in an article I find instructions how to run an incubator. I commence, and on the nineteenth day I lock the machine and loose the key, so no one can open it, for to do so is damage to the chickens. Then again I read we must follow the nature of the hen as much as possible, and the reason the old hen leaves her nest so often, after the chick is fully developed, is because the heat in the nest is so increased that it makes it disagreeable for her. So she comes off the more frequently, and then I want to find the key; but, no, it is lost. But my desire for the key increases as I pick up another paper and read: "If the eggs happen to be pipped on the under side they should be turned so the opening will be on the side and not top nor bottom." So again I am at bay. But I have the consolation of the young physician; he starts out with his diploma and expects to cure all ails, and make his mark high on the tower of fame. But his patients die, and continue to die—but he consoles himself with the idea he killed them according to the book, and continues to kill as before.

My chicks being hatched (or what I did not kill according to the book), must have a brooder. So I again consult my paper and find an article which says bottom heat produces leg weakness. So I construct a brooder, avoiding all bottom heat, and as it nears completion I pick up "Jacob's Poultry Special, No. 2," and then I find another club to knock my brooder in the head. A brooder is then described with only bottom heat, and it says: "If you peep inside you will find the chicks evenly distributed over the floor, and not inclined to pile up as in a brooder with top heat."

And now again I am directed to the nature of the hen and chicks. The little chicks hover under the hen to get the bottom heat, for you know the old hen's feet are on the bottom and the chicks get all that heat. So after reading all the *pros* and *cons*, I think the better way is to use all the common sense we have, and let the nonsense alone. Be like the old Jack—trust no longer to your neighbors, but cut your own barley. As Peter says: "Work out your own salvation with fear and trembling." Set rules will not govern every case. We must use our own judgment in all cases, but we can learn from other people's experience, and adopt what to us is practicable and leave the rest to our own experience. Theory is all right, but it never perfects anything. It takes practice to make perfection. We must grow in knowledge.

[It must not be overlooked that our columns are open to all, and much error may get in as well as the truth. The editor is not infallible. We are all (readers and editor), learning every day.—ED.

THE DUCK BUSINESS.

A. C. HULL, SANTA ROSA, CAL.

I am in the duck business in a small way, and would like to make it pay. You say in your August issue that the common ducks do not pay so well as the Pekins; I intend to keep them for eggs (as duck eggs are higher here than hen's eggs). I had two common ducks hatched in April of last year. One commenced to lay the last day of September, 1892 the other on the fifth day of October following. They are laying yet, and have not missed over forty days each in that time that they did not lay. I feed bran, middlings, green bone, and green stuff (mostly lettuce.) I raised about 150 young ducks. I sold some on the first of April last, just past eight weeks old, and they could cross their wings then. I got some Pekins in the winter that commenced to lay the last of February and quit on the tenth of July, and are now moulting. Have common ducks hatched in February that commenced laying July 11th.

CHEAP POULTRY HOUSE WINDOW.

G. I. H., STORM LAKE, IOWA.

Being a new subscriber, I was surprised at the short length of time in getting returns from my subscription. I consider your books Nos. 2 and 3, of POULTRY KEEPER series, grand, and your paper is full of good practical information.

I want to tell your readers how I made a cheap poultry house window. Finding it would cost me from $2.50 to $3.50 for a window for my house, I went to a photographer, and purchased, for twenty-five cents, enough exposed glass to make at least ten windows. I soaked the glass a short time in warm water, which readily cleaned them. Then I got a sewing machine frame from which I made a frame of the desired size, four and a half feet square. Then I used the remainder of the cleats for fastening the glass, letting the glass lap over each other about one inch. Such a window cost me twenty-five cents, not counting the labor, and for all purposes is as good as one costing three dollars and fifty cents.

CONTINUES TO CRITICIZE.

T. R. COMSTOLK, LITTLE ROCK, ARK.

Now, as regards to teaching the hens to become egg-eaters by throwing out the shells of the eggs to them—is all bosh; at least it is so in my experience. We have been keeping hens since the fall of 1855, and have never been without fowls in all that time. Knowing that hens to produce eggs must have something from which to form the shells, and as the shells are the very thing needed, we have invariably thrown them out as they were broken. Now we are running a boarding house, and use a great many eggs, and the shells are given to the hens in their fresh state. Yet in all that time we have never had an egg-eating hen.

Again you say, in the August number, "while milk and butter milk are excellent for fowls and chickens, it will not be beneficial to give either unless fresh and unchanged." We pour our milk, as sour as swill, into a trough, and when it separates we pour off the whey, and let the hens eat all they will, and that is "lots of it," and we seldom have a sick fowl.

In another article in the same paper, I read: "To keep my hens healthy I give them plenty of good sour milk, and about once a week (mind you only once a week) I put in the milk a little baking soda and stir it until it foams." Now here are two articles in the same paper square and flat-footed against each other—which shall I believe? I cannot believe without evidence, and my evidence comes from our practice of letting our hens have free access to all the sour milk they will eat and have not found any bad results yet.

We keep our hens healthy in this way. If the cholera shows any signs, we take about two quarts of water and put in a large tablespoonful of Venetian red, and let the hens drink that. We keep it filled up, and add more of the Venetian as needed, and we have never yet lost a fowl with cholera. Nor have we yet seen a fowl with roup or pip in our yards.

Now, to close, I think some men are great readers. For instance, in the August number is the question: "What is Alfalfa?" Now I want to ask a question: What is a Black Minorca? Is it a guinea pig or a kangaroo?

[We appreciate all criticisms. It is the way to learn. Even in the above our correspondent teaches some others. A Black Minorca is a breed of fowls of the Mediterranean class, black in color, tall combs, and non-sitters.—ED.]

INCUBATOR EXPERIENCE.

LOUIS S. FLETCHER, BEATRICE, NEB.

Since getting a few back numbers of the POULTRY KEEPER to post me up, on the chicken diseases and cures, I have become considerably interested in the business, so much so that I made a Poultry Keeper incubator, costing about $6.50, and have had the following success with it: I started the machine with seventy-two duck eggs, twenty-one hen's eggs, and eleven turkey eggs. I got out of the above forty-two ducks, seventeen chicks, and four turkeys. As the eggs came from the packing house, their age was anything inside of two months. I considered it a good hatch, in not knowing what the eggs were.

The next trial was as follows: June 12th, I filled the incubator with eighty-four hens' eggs, and thirty duck eggs. June 18th I tested out twenty-six hen's eggs and twenty-five duck eggs. June 19th I replaced the infertile eggs with twenty-eight hen's eggs, and the result was, July 7th, I got forty-three chicks out of the fifty-eight eggs; July 14th, I got sixteen chicks out of twenty-six eggs. This goes to show that a person can replace infertile eggs with fresh ones during the hatch, and have fair success, but it requires close attention. My old box is not very fancy, but she gets there just the same.

I think there is no better companion for any poultry raiser than the POULTRY KEEPER. The index on the front page is a valuable addition to it.

LIKES INSECT POWDER BEST OF ALL.

J. O. DELAND, BLUE SPRINGS, NEB.

I commenced taking the POULTRY KEEPER in its infancy, when it was published in Chicago, and have read it with interest ever since. Now that you ask for experience with insect powder I will give mine, as I use it extensively. Having several hundred fowls I have been obliged for two years to use a large stone basement for one flock. The place is a paradise for the festive louse, and they give me much trouble, compelling me to fight them constantly. I have used a great many remedies, but like insect powder the best. I use it freely on hens, on chicks, in nests, in cracks and crevices, and in my setting rooms. I keep the bellows filled with powder, and in the morning, when the hens are off for feed and water, I blow it into the nests so thick that the eggs are covered with it, and I have never had better hatches, often getting twelve chicks out of thirteen eggs. I always use Persian insect powder, getting the best and getting it fresh.

I can endorse what Mr. Purvis says about oatmeal. It is one of the best foods for chicks. I do not use the prepared hullness as it is too expensive here, but have the common oats ground, and sift out the hulls. I have used the drinking fountain he speaks of for years, but I now have a better one costing five cents. Take a gallon fruit can, place it on a hot stove, unsoldering the top, and punch a hole in the side, two inches from the top. Buy a two quart basin costing five cents. Fill your can, place the basin over it and invert the whole. This is cheap, keeps the water clean and the chicks out of it.

BROODY BY FATTENING.

DAVID M'MURDO, CASTLE ROCK, COL.

I think your claim that hens may be induced to become broody by fattening them is correct. I have been practicing that method myself for two years. A hen has got to lay before she will set. I feed for eggs during the winter, and when eggs get cheap in February I begin to feed more fattening food, and have managed to have about all the setters I could use from that on during the hatching season. I then change my feed rations again making them both lighter and less carbonaceous. It pays in more ways than one, for besides being prepared for early chicks, the light supply of eggs is at a time when they are cheap, and the hens will then lay better when the advance comes. The breeding fowls must not be fed to fatten.

In reading the record made by Mr. B. DeForest's thirteen White Leghorn pullets, and his disappointment with the Barred Plymouth Rocks, I could not help but think that he may have been as much to blame for their not laying as the high scores. The Plymouth Rocks take on fat very quickly, and if they received the same feed that the Leghorns did it was sufficient reason for not laying. Another reason may have been that they layed well during the winter, and should not have been expected to lay as well as others that did not. Of course my supposition may be incorrect in this case, but I wish to say that no breed should be condemned from a two months' trial.

INSECT POWDER NOT INJURIOUS.

DR. ROBT. S. BOOTH, STEM, N. C.

I think the POULTRY KEEPER is the best journal of its kind that I know of. I wish you success, and feel sure I will succeed if I read and follow all the good advice your paper contains. I want to say a word or two in reply to a communication by Miller Purvis, in regard to insect powder killing chicks in the eggs. A few days before I got your paper I set two hens—one on sixteen eggs and the other on fourteen. I sprinkled a mixture of equal parts of Persian insect powder and tobacco snuff, all in the straw of which the nests were made. I also dusted the hens well with it. After seeing what Miller Purvis said, I thought my eggs would surely not hatch, but as I was in for it I would try the experiment. So I waited ten days and dusted more on the hens, and even on the eggs, and out of the thirty eggs the hens hatched twenty-one healthy chicks. One hen being heavy, she broke two of her eggs. I will try it again.

VISITED "UNCLE JOHN."

M. A. WEIANT, WORTHINGTON, OHIO.

Having heard so much about Mr. John Bennet, of Sunman, Ind., I decided to run over and see him and his Spanish. I must say that I saw the finest flock of Spanish in his yards that I ever saw in my life. His birds were in the pink of condition; I did not see a poor bird in the flock. One male bird in particular was a wonder. His face was so long that he could hardly walk for stepping on it. This is a fact. Mr. Bennett gave me a royal reception, showed me over his beautiful little farm, and gave me a ride behind his fast trotter. I got some pointers about Spanish that I never knew before, and in conclusion allow me to say that what "Uncle John" does not know about Spanish is not worth looking after. Since the day I was married, I have not put in a more pleasant day than this one with "Uncle John."

LICE THE GREAT DRAWBACK.

The gravest difficulty in summer is that of lice. Unless both the hens and the house are cleaned, the matter of getting rid of lice is one that entails labor. When lice are to be destroyed, dependence should not be placed on a single attempt. If necessary, repeat the operation daily for several days. Every portion of the house should be saturated with kerosene or the kerosene emulsion. In fact, the house, yards, fences and everything should be drenched, getting the liquid well into every crack and crevice. Kerosene will kill lice surely, and so will the emulsion. After applying it several times to the building, give the interior a liberal application of whitewash, using a gill of crude carbolic acid with each bucket of whitewash. Take each hen by the legs, head downward, and dust her well with a mixture of fine coal ashes (sifted two or three times) and Dalmatian insect-powder, by adding a pound of the powder to each gallon of ashes. Then give the hens plenty of fine ashes to dust in. Do not try this remedy once, but, as stated, repeat it two or three times, and it will be destructive to all the lice, as well as save labor afterward

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Insect Powder not Injurious.—I saw in the August issue that you would be pleased to hear from some of your readers about insect powder killing chicks in the shell. I think the one that was telling about his chicks dying in the shell by the cause of insect powder was away off. I have put insect powder on my hens, and on the eggs, until they were yellow, and my eggs hatch out almost every one. I put it on as often as three times a week, and I have had 116 chicks out of 165 eggs, and the rest of them hatched all but eight or ten. How is that? —*D. J. Ritchey, Reading, Mich.*

Homœpathic Remedies.—I wish to correct, if I may, a small paragraph in the POULTRY KEEPER, of a former issue, entitled "Homœpathic Remedies for Roup" In the third paragraph, page 43, of June, it reads "If the Roup, in developing, appears first on the right side, give *Lachesis* (I think *Lycopodium*); if on the left side give *Lycopodium* (I think *Lachesis*). Symptons of *Lycopopium*, pain and soreness begins on the right side of the throat. Of *Lachesis*, pain and sorness begins on the left side of the throat. It may have been a mistake of the writer.—*J. H. Boulton, Halifax, N. S.*

In for the War.—Since starting here, two years ago, we have been tried by flood, lightning and death, and now by fire, yet we will hold the fort. We have enlisted for the war and success, and are bound to win. I love the business, love every little feathered biped, and sometime, when patience has won her reward, I will write you a sketch of my trials and triumphs. We could not do without the POULTRY KEEPER.—*O. H. DeLuce, Wheaton, Ill.*

Very Early Laying.—In the August number of your paper a writer tells of chickens hatched in an incubator, November 22d, that layed in July. I do not think that is anything remarkable, as it is very common for us to hatch pullets in February, up to the first of March, and have them lay by July 15th. We have ten which were hatched February 20th, and laying to-day (July 31st), and dropped their first egg July 10th.—*N. Porter Brown, Westboro, Mass.*

Dig Turkey Trade.—My sales for 1892, poultry and eggs, were nearly $1,600, and this year gives promise of being as much. I have orders booked now for a number of bronze turkeys, to be shipped this fall to England and Ireland. I formerly exported by way of New York city, but now ship by way of Baltimore, as steamers from this port will take over fowls for about one-half what the New York lines charge. I was a subscriber to the POULTRY KEEPER before it left Chicago, and will take it as long as I am a fancier. *J, F. Barbee, Millersburg, Ky.*

Hatching With Moisture.—I thought I would write you a few lines about hatching with moisture. My machine is a hot air incubator, which I run in a damp cellar. The floor is made of boards. The incubator has two pans, each pan being divided into two sections. I fill one section on the tenth day and another on the eighteenth, and when the chicks commence to pip the shell I fill both pans with steaming hot water. I always hatch seventy-five to ninety per cent. of fertile eggs, and my last hatch I got seventy-four chicks from eighty eggs, making ninety-two per cent. They are all healthy, lively chickens. Your paper is always full of good poultry news. *M. D. Marsh, Hackensack, N. J.*

Wants Information.—Mr. DeForrest's letter, August number, is admirable so far as it goes, but, why did he not give us the monthly record from October 11th, 1892? I would direct his attention to an excellent letter in the January, 1890, number, by Mr. Bause. You remark "in this experience meeting the editor listens and learns." That being the case, one of 'em would like to know the date of "to-day" (6th line of the first letter under that heading, page 69). The absence of any date in letters, otherwise instructive, is often exasperating, as it renders calculation impossible. — *Louis Castodes, Phillipsburg, Montana.* [Thanks for the suggestion.—ED.]

Well Worth $5.00—While I am glad your paper is only priced at fifty cents a year, because everybody can afford to take it that is able to own a hen and chicks, yet it is well worth $5.00 a year to any one raising chickens, even if they only raise for home supply. It could not be overvalued by one going into the fowl business for a living.—*Mrs. Jones, Lorena, Texas.*

Uses Insect Powder.—In the August issue there is an article on using insect powder—that it is detrimental to the eggs. I always use it with hens, and always put it in the nests; not only powder, but sulphur and carbolic acid. This spring I hatched twelve chicks out of twelve eggs. I had a hen die sometime in the night that was sitting on twelve eggs. The eggs were cold in the morning, but put I them in my incubator that had just hatched, and got ten chicks from the eggs. Nine of the chicks are now living. I used insect powder all of last season, and with sixteen setting hens this spring. Among some pure-bred Plymouth Rock eggs hatched one chick has one feather on each foot. Is it a pure breed?—*Adam Todd, Englewood, Ill.* [The purity of the chick is doubtful.—ED.]

A Good Hatch.—I am running an incubator, and just hatched 138 chicks from 200 untested eggs. There were forty chicks dead in the shell, and twenty-two eggs infertile. How was that for a hatch? Send the POULTRY KEEPER right along, as I shall take it as long as I raise chickens.—*J. B. Storms, Lebanon, Kans.*

Cure for Gapes.—Let me say right here, that trying to scrape the gape worm out of a little chicken's throat by means of a horse hair, feather, or any other such instrument, is a slow piece of nonsense, and also that I have tried turpentine in all kinds of ways, and heaps of other "sure cures," and found them useless. I will give you a remedy that I know is certain to cure if done right. Have your little chicks in a handy box or basket; take them one at a time in the left hand, and with the thumb and finger open their mouth wide. Have a dish of the common insect powder ready, and with a goose quill give a quick puff and send it down the throat. Use about as much powder as half a five cent piece will hold. Then, as lice are nearly always in partnership with the gapes, give the outside a searching, and may be a dusting also.—*Kenneth Skinner, Dixie, Ont.*

More Powder Experience.—In reply to your inquiry about experience with insect powder, I would say that I have used "Death to Lice" the past two seasons with good results. I dust the hen when setting her, and again about three days previous to hatching, and when I remove her and the chicks from the nest; it is sure "death to lice." In your article, "Increasing Egg Production," you say we may allow each hen a tablespoonful of linseed meal three times a week, but that we must be careful not to make them fat. Would not that allowance be almost sure to do so? I use it, but not more than one-third that amount.—*David McMurdo, Castle Rock, Colo.* [The linseed meal is fattening, as you say, and of course judgment must be used in feeding it. If grain is withheld, the quantity of linseed meal suggested by us is not too large.—ED.]

Lime Water.—A party in an adjoining neighborhood, who keeps a few hens, has been in the habit of giving them lime water to drink. He now says "It is worse than useless; they don't lay any more eggs, and it gives them *stone in the bladder.* Score one for our side.—*S. S. Barrie, Mont Vale, N. J.*

Insect Powder Again.—In your August issue we saw that someone wrote in regard to insect powder killing chicks in the shell I would say that on April 1st we set two hens on fifteen eggs each, and covered the hens once a week with the powder during the incubation, and hatched twenty-two chickens, good and strong, and most of them lived. Since seeing the article, we are trying again, and will report the hatch. —*Fellers Bros., Table Rock, Neb.*

Uses Natural Gas.—I am just starting in the poultry business. I have 100 chicks and twenty-one hens. I hatched my chicks with hens, but am going to use an incubator next winter. I use natural gas to heat my coop in winter.—*M. F. Eberhart, Four Mile, New York.*

A Grand Hatch.—I got forty-two chicks from forty-four eggs, hatched in a POULTRY KEEPER incubator that I made.—*R. E. Miller, New Haven, Mich.*

Good Weight—Cholera.—How is this for weight! A cockerel three months and three weeks old, weighed four and one-half pounds? I see a good deal about cholera. The best remedy for that, nine times out of ten, is grease on the heads of the little ones, and Persian insect powder on the fowls, with plenty of kerosene and lime in the house and roosts—because, I believe what people usually call cholera, is nothing more or less than *lice.*—*G. D. Hulett, Edgerton, Kan.*

Bought Lice With the Farm.—Your paper is all that one could wish and a very valuable help to beginners. We have moved on a farm already stocked (with lice), big and little. Have lost some small chicks with them, through forgetfulness to use insect powder on the hens when they came off with their brood. An old lady advised me to mix one tablespoonful of coarse sand with every quart of soft feed. We have done so with good result. A large hen died for me. Her comb had been very dark for some time. A post mortem showed tumors in the heart I should judge. The growth was hard and white. I think it a good plan to open fowls and find out the cause. Kerosene emulsion does excellent work with me for lice.—*E. A. Goodwin, Brookvale, Conn.*

Has 3,000 Chickens.—Have had very good luck with my chickens this year. I now have something over 3,000, and will not hatch more than 3,000 eggs yet. I have 1,800 eggs in my machines now, and will put in about 1,200 more; then I will rest for a while. It's too bad about the Show at Chicago. I don't think it will amount to anything unless someone with a little life and snap gets hold of it. Entries should not close until September 15th. As matters are in Chicago, I do not intend going; if they change I may go.—*Robt. A. Colt, Pittsfield, Mass.*

A Louse Remedy.—If the trouble with my chickens was lice, here is the remedy: One pound each of chalk, phosphate soda, charcoal, flaxseed, cottonseed, carb. iron (because I could not get the chloride); one ounce each, ginger, soda, salt, Peruvian bark and sulphur. One teaspoon in soft feed for twenty chicks. This is taken from Mr. Jacob's "Management of Young Chicks." If not a good lice cure it worked perfectly in my case, as I have not had a sick chicken since I have used it. I write you this because I hate to have even a perfect stranger think I do not know enough to look out for lice, when in almost every issue of the POULTRY KEEPER you caution your readers on that subject.—*Mrs. A. W. McIntrie.*

Leg Weakness.—I am raising a few chicks by hand, and I find that too much heat, and feeding no meat, nor changing the feed, brings on leg weakness. Letting them get their feet wet in an outdoor cold brooder helps the weakness. I had them shut up in the setting room, but a setting hen acted as if she would soon leave her eggs to brood the chicks, so I had to take them away. I made a cold brooder with a run. The run was slatted, and the rain came, and the floor of the run got too wet for chicks with only down on their bodies. They were doing well in the setting room on a dirt floor. I fed them wheat and gave them fresh water every day. I changed their feed, greased their heads and under the wings for lice, and fed them meat, and they are now doing well.—*H. S. Laister, Snohomish, Wash.*

Creasote for Roup.—I have found creasote the best remedy for roup. By using a feather anoint the sores with the liquid. Use fifteen drops in one quart of water as a disinfectant. This is a sure cure if used for one week or ten days. I wish the POULTRY KEEPER came twice a month.—*Mrs. G. W. Briscoe, Louisville, Ky*

Success With Thoroughbreds.—Here's my experience with thoroughbreds: I bought six eggs, hatched five and raised them. I fed grit, ground oats and corn, wheat, and table scraps. I think I have at least one prize-winner, according to the standard.—*Lee Elder, Belox, Miss.*

KEEPING DUCKS AND GEESE.

The advantage of raising ducks and geese over turkeys and chickens is, that, if they can be given the range of a good pasture with plenty of water, they will need less looking after. They are hardy, easily raised and require less expensive food than other poultry. To this may be added the fact that in nearly all cases they are healthier, being less subject to disease and free from lice. An additional source of income is their feathers. They lay eggs, hatch young fowls, and yield a good quantity of feathers, and can with good treatment be made profitable. Of course with either it is always best to have the larger, better breeds. Embden geese and Pekin ducks cost no more to raise than the other kinds, while they return a much larger profit. Ducks, if provided with comfortable quarters where they can rest at night and are reasonably well fed, will often commence laying the latter part of January or the first February, and lay very regularly until warm weather sets in. Geese begin to lay early in March and will lay fourteen to eighteen eggs; these should nearly always be set under hens, as it is often the case that the mother will not become broody until late. With ducks it is usually best not to attempt to hatch out the first laying of eggs unless it is done in an incubator. They are less trouble to raise in a brooder than either turkeys or chickens, and with good feeding can be made to grow very rapidly, much faster than chickens, so that when three months old they readily weigh four or five pounds apiece, while chickens will average about two. Both ducks and geese require less grain and more bulky feed than turkeys or chickens, and it is best, and especially so with geese, to sell the younger fowls and keep the older ones for laying and breeding. After they are reasonably well matured, the feathers can be picked regularly several times during the season. A full grown goose of either the Toulouse or Embden breeds will average a pound of feathers during the season, says a writer in *The Husbandman*, and that will pay readily for their keep, giving the eggs as increase for profit. With the Pekin ducks it is a mistake to think that a pond of water is necessary; they will get along very well with what is needed to drink, and this must always be supplied liberally and be pure and fresh, But geese need plenty of water. So far as possible the better plan is to give them the run of a good pasture, penning up at night. This is especially necessary with the ducks after they commence laying or a good portion of the eggs will be lost, as they drop them almost anywhere, and it is only by keeping them penned up at night that they can be secured. It is not best to confine them with other fowls; have a separate apartment and see that bedding is supplied so they can be kept clean and comfortable. While they like to swim and play in water, it is very important to their health to have the place dry where they rest at night.—*Orange Judd Farmer.*

KEEPING THE BILL OF FARE.

Mr. M. G. Weaver, Terre Hill, Pa., sends his "Bill of Fare" for broilers, in which he gives some suggestions. He says that he found it difficult to remember all the points in feeding, especially when the changes are so frequent. In his letter he says: "I hang this bill up the day I put the chicks in the brooder, and every time I feed I check off on the proper place. Thus I always know with certainty how old the lot is, and just what to feed. So does my wife when I am absent. In summer I repeat the six o'clock meal at eight o'clock, without checking. I suggest that you get up a printed cardboard and sell to the trade. It would be invaluable, and assist amateurs.

We give below the form. "C" means "cracked corn;" "O" means "oatmeal;" "M" means "meat;" "W" means "wheat;" "S" means "scalded food;" "P" means "potatoes;" "X" means "cooked cake" of ground grain, "G" is "green food," and "W-M" is wheat and meal, etc.

	6 a.m.	8	10	12	2	4	6 P.M.
1st day							
2d "	O	O	O	O	O	O	O
3d "	O	O	O	O	O	O	O
4th "	O	O	O	O	O	O	O
5th "	X	O	X	O	X	O	X
6th "	O	X	O	X	O	X	X
7th "	X	O	X	O	X	X	X
8th "	O		W-M		X		C G
9th "	X		W-P		X		W-G
10th "			C-P		S		C G
11th "	S		W-M		"		W G
12th "			C-P		S		C G
13th "	S		W-P				W G
14th "			C-M		S		C-G
15th "			W-P				W G
16th "	S		C-P				C G
17th "			W-M		S		W G
18th "			C-P				C G
18th "	S		W-P				W G
19th "			C-M		S		C G
20th "			W-P				W-G
21st "	S		C-M				C G
22d "			W-P		S		W-G
23d "	S		C-P				C G
24th "			W-M				W G
25th "			C-P		S		C G
26th "	S		W-P				W G
27th "			C -M				C G
28th "			W-P		S		W G
29th "	S		C-P				C G
30th "			W-M				W-G

The above is a very good bill of fare to use for feeding chicks. It will be noticed that for the first day no food is given. Until the eighth day the chicks are fed seven times a day, or every two hours. After the first week they are fed four times a day, or every four hours. The food is varied, being composed of grain, meat, and green food, and is compiled according to our "Library of Points," in the August, 1892, issue by Mr. Weaver.

We trust that the above will not only prove valuable as a guide to feeding but that some reader will improve upon it. It is alone worth a year's subscription to the paper.

HOW MUCH FOOD TO GIVE.

A quart of corn, twice a day, to twenty hens is supposed to be an allowance, but no estimate can be arrived at, as hens will not thrive on corn alone, nor will all the hens in a flock eat alike, or prefer the same kind of food. When feeding the hens give them a variety, but never give them more than they can eat up clean. It is better to give too little than too much. In the winter the hens should have two good meals each day, but in summer one meal is ample. If they are on a range it is safe to assert that one-half of the quantity supposed to be a meal will be sufficient. The poultryman must observe his flocks, and judge of their wants by the amount of forage on the range.

BROODY HENS.

So long as broody hens are allowed to have their own way the egg product may be expected to assume a vanishing form. These hens should be "broken up" at once—changed from setters into layers. There are several effective and harmless ways of doing this. The very best method, because of its effectiveness and simplicity, is to provide a room without nests—any plain room with roosts to perch on—and put the broody hen therein, says a correspondent of *The American Agriculturist*, which adds: Give her a companion, an active, vigorous cockerel. Feed and water generously, adapting the feeding to the production of eggs. A week will generally suffice to break up the most persistent setter, with no special trouble. Sometimes three days will have the desired effect.

STANDARD FOR WHITE WONDER FOWLS.

The following is the standard adopted by the American White Wonder Club.

Weight.—Cock, nine and one-half pounds; hen, seven and one-half pounds; cockerel, eight pounds; pullet, six and one-half pounds.

Disqualifications.—Shanks any other color than yellow (except in hens, which may be faded to a light straw color), or unfeathered down the outer sides to the toes; vulture hocks; positively wry tails; crooked backs; deformed beaks; any deformity of shape injurious to breeding qualities; permanent white in ear-lobes; combs other than rose in general shape; absence of corrugations or small points upon top surface to be regarded as a defect; feathers (plurality) other than white or creamy white in any part of plumage.

Color of Skin.—Rich yellow. *Color of Plumage.*—White, but shafts of feathers may be creamy white.

MALE.

Head.—Medium short. Crown, medium broad. Beak, short, stout, slightly curved, yellow. Eyes, medium size, clear and bri.ht. Color, golden brown, or rich straw.

Comb.—Rose in general shape, low, top surface slightly oval and may be corrugated, or evenly covered with small points, terminating in a dull pointed spike.

Wattles and Ear Loves.—Medium in size, well developed, rich red, fine texture. Wattles moderately rounded, alike in size and shape.

Neck.—Short, gracefully arched, with a full flowing hackle.

Back.—Medium short, broad and flat at shoulders, saddle rising with a slightly concave sweep to tail; saddle feathers long and abundant.

Breast.—Broad, full, deep, carried well forward.

Body and Fluff.—Body medium in length, broad, deep, well rounded at sides; keel bone long and straight; Fluff, broad and moderately full.

Wings.—Medium in size, neatly folded, not carried very high, wing butts and wing fronts well covered with saddle and breast feathers.

Tail.—Full, of medium length, fairly well spread at base, carried moderately upright; Sickles, lesser sickles and tail-coverts of full medium length and gracefully curved, well covering the tail feathers.

Legs and Toes.—Thighs, large, medium short, and well covered with soft feathers; Shanks, rich yellow, rather short and stout, well apart, the outer sides fairly well covered with soft feathers. Toes, medium length, well spread, outer toes may be moderately feathered, but preference to be given to those without feathers.

FEMALE.

Head.—Head, with all its appendages, including Beak, Eyes, Face, Comb, Wattles and Ear-lobes, same as described for male, (except in size) which latter is to be relatively much smaller, corresponding with the natural differences caused by sex.

Neck.—Short, neatly arched, well and smoothly feathered.

Back.—Broad and flat at shoulders, medium in length, with a gradual incline to the tail.

Breast.—Breast same as described for male.

Body and Fluff.—Same as in Male, except Fluff, which is relatively more full.

Wings.—Of medium size, well folded, but not carried very high.

Tail.—Medium in length and spread, carried at an angle which neatly extends the incline of back. Tail coverts plentiful and well developed.

Legs and Toes.—Same as described for male, but relatively smaller and finer in bone, as the sex would indicate.

HOW MUCH TO FEED.

The following is repeated from a former issue in order to reply to an inquiry sent us in regard to feeding, and also as to whether four hundred hens can be kept on one acre:

"Do you honestly believe 400 hens can be profitably and thriftily kept on one acre? Will you tell me how much and what to feed fifty Light Brahmas, which are divid d into three pens each, 20x125 feet each. I want to feed for eggs, as I shall mate with White Leghorn (rose-comb) for broilers.

We believe 100 hens sufficient for one acre, but 400 may be kept on such a space in winter. One of the causes of failure is overcrowding. It is estimated that 100 hens equal one cow, and we doubt if the most skilled dairyman will attempt to keep four cows on an acre.

The question is as difficult to answer as to ask how much should a man eat for dinner. If he sits down to meat, potatoes, fish, soup, pastry, etc., the amount he would eat would be difficult to measure or estimate in advance, as he would prefer certain kinds, or eat more one day than he would the next. The same rule applies to hens. It is estimated that four ounces of mixed food per day to each hen is heavy feeding. Less than two ounces daily is the average, as hens differ. Then again, two ounces of one kind of food does not contain the same elements as two ounces of some other food. For summer we suggest one ounce of lean meat in the morning for Brahmas, and an ounce of scalded chopped clover at night.

WHAT ABOUT THOSE PRICES.

A high price for broilers is an inducement. We often receive letters from readers asking us where to get the high prices, and why they receive such low prices. Here is an inquiry from Indianapolis, which we present in order to give information to all who may be interested. The writer says:

"I notice in your paper that you get seventy-five cents for broilers. I went to one of the finest hotels in the city, and they told me that they got broilers at fifteen cents per pound from a firm who buys them now (August), and freezes them, thus keeping them all the winter. Now, will you write me and tell me where I can ship them East, or where I can get seventy-five cents each for them. One firm said they would give twenty cents per pound alive."

The above confirms what we stated last month about the supplying of a hotel. A hotel is the poorest customer to be found, for no matter how high the *reputation* of the hotel may be the pr oprietor buys wholesale, and at the lowest rates, using *frozen* stuff as is mentioned above.

Now, as to *where* to sell, and *who* buys, we cannot answer. We do not hunt up customers, nor do we know anything about commission men. We are willing to assist you to *raise* poultry but you must do the selling yourself. We give you the prices in market as quoted from the daily prices current, but we do not know anything of the markets or men in cities hundreds of miles away. We suppose that there are a thousand or more commission merchants in New York, but we would not recommend one if we could, as it would make us responsible. If you got the best prices you would consider that you were fortunate, but if you were cheated you would fall upon us with complaints.

BLACK COMB.

The comb is the indicator of disease. Red comb indicates a healthy condition, pale comb a debilitated condition, and black comb extreme illness. An inquirer writes us as follows:

Three of my neighbors have fowls sick with black comb, drooping around, and I am anxious for you to write me at once the remedy so I can give it to them.

He informs us that his neighbors' fowls are sick with "black comb." If he should write that a person was pale in the face, and a remedy was required, he would impart fully as much information. There is no such disease as black comb. A fowl may have a black comb and be ill with any one of the numerous diseases. He should have described the symptoms. We never care to know the color of the comb, as we can always safely assume that when a bird is sick its comb is pale, dark, or black.

EGGS WILL PAY.

In some sections eggs have been as high as sixty cents per dozen for choice, and thirty cents per dozen has been easily obtained in nearly all of the large cities. When the snow and severe cold place obstacles in the way of the farmer, he is compensated for such difficulties by better prices. The object should be to get as many eggs as possible from the hens. This can be accomplished only by taking a little extra care with the fowls.

The main essential now is to keep the hens warm. The food will not make the hens lay if they are kept in a cold poultry-house. Swollen heads, frosted combs and sore eyes show that something is lacking with the poultry-house. Stop up every crack and crevice, and aim to have the interior of the poultry-house secure from the cold air finding its way in to chill the hens when they are on the roost at night.

In regard to how best to feed the hens for eggs, it may be mentioned that meat is the best egg-producing food. If the money expended for ground grain and soft messes was bestowed on the purchase of meat and bone fresh from the butcher, or even for such foods as fresh blood or liver and a full meal of corn and wheat given at night, the hens would produce more eggs than when kept on a mixed diet of grain.

Food should, however, be varied. The grain will be all the better if it is mixed, and corn, wheat, oats, barley and buckwheat used instead of corn alone. Bulky food is also incentive to laying, and may be given in the shape of clover hay, cut fine and scalded. Warm water is the best stimulant and invigorator, but the most essential of all is a warm poultry-house.

WARMTH IN BROODERS.

No matter how well the chicks in the brooders may be fed, the lack of warmth at night will cause them to droop. Most persons suppose that the brooders may be two warm and that the chicks will suffocate, but it is seldom that young chicks are injured by too much warmth. At least ninety degrees of heat should be found on the edges of the brooder, and as much as ninety-five should exist at the center. This prevents the chicks from crowding, which always happens if the heat is low; but if the brooder is very warm at the center, the chicks will spread out under the brooder and be more comfortable. If in doubt at any time in regard to the proper degree of heat to have in a brooder, it will be safe to give to much heat rather than too little, for if the brooder is too warm the chicks can easily secure a cooler location near the edge, but if too cool under the brooder they will crowd until some of them are crushed to death.

KEEPING FOOD BEFORE FOWLS.

To put food in a trough and then place the trough where the hens can have free access to the contents, is an inducement to idleness and also detrimental to success, for the reason that it is better for the hens to be compelled to work and scratch. When a feed-trough is used, some of the hens will eat more than their allowance, and become excessively fat. Experience shows that the best laying hens are the ones that are the most active, and the keeping of food before them will ruin the best flock that can be raised. It is well enough to use a trough when soft food is being given, but the trough should be cleaned out as soon as the hens have finished their meal. If the hens are laying, it will do no harm to have a small box filled with ground bone where they can help themselves, as the bone will serve as grit and will not cause them to become overfat, as they will not eat too much; but all grains should be scattered.

OPERATING THE INCUBATOR.

If you have an incubator do not oblige your neighbors by opening the egg-drawer frequently, as the cold air chills the eggs and causes the chicks to die in the shells. Do not cool the eggs, as it is not necessary, and do not open the egg-drawer to turn the "pipped" sides of the eggs up. When the chicks begin to come out, do not remove any of them until all are hatched, but leave them in the drawer. They will not injure each other as much by trampling as will be done the chicks in the shells by a sudden lowering of the heat, which happens when the chicks are removed, as the bodies of the chicks contribute to the warmth of the incubator by the animal heat given off. The temperature for hatching is 103 degrees, which is quite high; hence, a draft of air or sudden chilling of the eggs is a severe shock to the chicks, and especially when they are breaking the shells.

MANAGEMENT OF GUINEAS.

There is but little sale in market for the guinea, but it is, of the domestic birds, the nearest approach to the wild fowls in flavor of meat of any known. If they hatch out their young, then they become truly a game bird, as the shotgun will be necessary when one is wanted for the table, but the young guineas, if hatched with the chicks and the old guineas killed off, will grow up tame and come up to roost every night in the poultry house. They are excellent foragers, and as insect destroyers have no equal, as they search over every portion of the field. Keep a few for your own use, as they are excellent layers and superior fowls for the table.

CARE OF CHICKS IN BROODERS.

One of the prettiest sights I know of is a brooder full of little chicks from one to ten days old. I never grow weary watching their graceful motions as they disport themselves in their little playground, industriously scratching in the clean sand, playing at leapfrog or contesting the possession of a toothsome morsel of meat or bread crumb, keeping up meanwhile a ceaseless chatter. The pleasing effect is heightened if they belong to a variety of breeds. But to raise these little animated puffballs is where the work and skill comes in. To bring them safely through all the perils of babyhood and feathering-out—there's the rub. To keep them well is the secret of success. I know of no more unsatisfactory part of the poultry business than doctoring sick chickens. It is seldom a success. To keep them well they must be kept warm. It is the first letter of the alphabet of successful chicken-raising. I lost heavily at first until I found this out. Fifty per cent. or more of each hatch would drop out with bowel disease until three weeks old, and then many more when changing from down to feathers. It was a very discouraging experience. I kept altering my brooders and experimenting until of my last hatches I lost only one or two per cent. through sickness. My great mistake had been in not keeping the brooders warm enough. I now keep them at 100 degrees day and night for about a week until the chicks get a little strength, and then reduce to ninety-five degrees and then to ninety degrees. Until little chicks are feathered they are but little better than naked, and need a tropical temperature to which they can resort when they feel the least chilled. After they are ten days old they will endure a considerable degree of cold if they can run at will into a warm brooder. Any attempt to save kerosene by turning down the lamps is disastrous. It doesn't pay to save oil at eight cents a gallon and lose chicks that will at ten weeks old bring twenty-five to fifty cents a pound. At night the chicks are exposed to the greatest risks, and there must be no mistake about the proper amount of heat. Too low a temperature at night for only a few hours may result in the loss of many chicks.

For the first ten days they must not be allowed to get far away from the brooder. My brooder-house is divided by partitions into sections six feet wide. The brooders, one foot high and three feet square, are set against the back wall, one foot from one partition and two feet from the other. These spaces are floored over level with the top of the brooder; a four-inch board is in front, and inch mesh netting, one foot wide, stretched and fastened to that and the partitions. The chicks are not allowed to go off this platform until ten days old. The first couple of days they are not allowed to go more than a foot from the brooder, and then only for a little time to eat, drink and exercise, and then they are put back in the brooder and kept dark and quiet for a couple of hours to rest and take a nap. In fact, they need much the same treatment and care that babies do. I take a last look at them before I go to bed. If everything is quiet and the chicks lie scattered all over the brooder floor, then the heat is just right If there is a noise of scuffling and crowding, and the chicks are hugging the centre of the brooder, they need more heat at once, or some of them will get underfoot and be trampled to death, and bowel disease will put in an appearance. If they lie with their heads outside the curtains, the brooder is too warm, and there is danger of leg weakness. It may be objected that all this watching and care takes a great deal of time, and so it does; but just such watching and care, day and night, must be exercised or else the artificial rearing of chickens will prove a dismal and exasperating failure.—*Cor. N. Y. Tribune.*

THE WASTE OF POULTRY MANURE.

The amount of valuable poultry manure lost annually is enormous. Not that which is dropped in the poultry-house, but the daily droppings on the runs. If this could be carefully saved and piled in a heap so as to be measured, the quantity to be derived from 100 hens would astonish the poultryman, and enable him to realize his loss every year by failing to secure the droppings that are voided on the yards during the day. To scrape the yards would entail too much labor, and the ground could not be well utilized except for poultry. To get over the difficulty, every poultry-house should have two yards—one for the occupancy of the hens, and the other for the growth of crops of some kind, changing the hens and crops alternately. The advantages of this system are: 1. The hens will manure the ground, and no hauling is necessary. 2. The droppings being turned under, the yards will be kept clean and free from disease. 3. The hens being in alternate yards, with crops growing in yards between each flock, the males cannot fight through the wire fencing. 4. As the hens can have only one yard at a time, there will be no loss of space. 5. The wire fencing can support Lima beans, tomatoes or peas. 6. The yard will become more fertile each year. 7. The hens can pick up quite an amount of green food when turned on the yard from which the crop is removed. 8. The hens will enjoy the change of yards.

THE POULTRY KEEPER.

Subscription Price, 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line ($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

TO THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

LAY in a big pile of dry dirt. You will want it in winter.

LIMED eggs and butterine belong in the same class of goods.

HENS seldom sit in winter, but the incubator is ready at all times.

WE send this paper six months on trial for only twenty-five cents.

WE will send you three poultry papers, one year, for one dollar.

ANYBODY can keep chickens, but anybody cannot make poultry pay.

NOW is the time to begin with the incubator for early broilers.

SEND two stamps to P. H. Jacobs, Hammanton, N. J., and get plans for an incubator.

WE are preparing for our usual fall and winter extra edition, which may reach 100, 000 copies.

DO you want work this winter. If so build a warm poultry house and give the hens your attention.

GO ahead with the decimal score card. Give it a trial. Everything of the kind is worth testing.

CORN and wheat are cheap, but they will not serve as food unless the hens are given something else as well.

OPEN the ventilators at night, allow a nice, cool draught to blow over your birds, and then—look out for roup.

HAS Brother Pierce's mailing clerk gone to Chicago? We anxiously look for the *Gazette*, which perhaps skipped over us.

WE begin to believe that we have stamped out "another poultry paper bought." Such announcements seem to have ceased.

IF you are buying eggs for incubators it will pay you to make a present to your neighbors of some pure-bred males. Try it.

NEW YORK will have her next show at Madison Square Garden, February 8th to 13th. It has been announced early, which means business.

THE veteran James Rankin, of South Easton, Mass., was the first man to bring large duck farms into notoriety. He was the pioneer and leader.

THE old and reliable *Poultry World*, of Hartford, Con., is still one of the prettiest, best printed, and most valuable poultry journals published.

UNCLE Mike Boyer's masterly hand can be seen in the *Fancier's Journal*. The paper seems to have bounded off with new life. It is full of the choicest matter.

DON'T forget that if you suspect chicken cholera the fowls will either die or recover inside of forty-eight hours. Cholera does not hang on. It does its work in a short time. Many persons suppose their birds have cholera when the difficulty may be something else.

WHERE are the specialty clubs at present? The Plymouth Rock and Cochin clubs have come forward, but what about some of them meeting at Chicago?

TEN years ago the *Fancier's Gazette* promised to give the POULTRY KEEPER a notice, but would put us on *probation* first. It is time for the notice we believe.

WE learn that one of the leading pigeon journals has ceased. It was one of the best of its kind. There are not a sufficient number of pigeon admirers to support a paper.

HAMMONTON (not Chicago) is where the World's Fair should have been held. So says Uncle Mike Boyer while knocking the ashes from his pipe one day.

IN the *Ohio Poultry Journal* the notorious Bain has an advertisement of eggs and a book. Perhaps the editor may have overlooked the matter, but we call his attention thereto.

HOW to be at the A. P. A. meeting at Chicago and enjoy the oriental dancing on the Midway Plaisance at the same time is a problem now confusing the minds of some of the members.

THE Cleveland Poultry and Pet Stock Association will hold their annual show in Cleveland, Ohio, December 14th to 20th, 1893. Mr. H. J. Schaaf, Brooklyn, Ohio, is secretary.

THERE is no standard for the Guinea fowl, which is found on nearly all farms yet the Standard contains breeds of fowls some of which have never been seen by farmers and by many breeders.

A JERSEY cow with a record of over thirty-four (?) pounds of butter in one week, could only get over fourteen pounds at the *public* test at Chicago. It is almost as bad as some of the score card scores.

THE third annual exhibition of the Henry County (Illinois) Poultry Association will be held at National Guard Hall, Geneseo, January 23rd to 29th, 1894. Mr. Wm. G. Warnock is secretary.

THE Northwestern Ohio Poultry and Pet Stock Company, was incorporated May 13th, 1893, and will hold its third annual exhibition in Tiffin, Ohio, January 10th to 13th, 1894. Mr. D. S. Biller is secretary.

THE Los Angeles (California) Poultry Association does not waste any time. It has a "committee on the press," whose duty is to secure essays on selected subjects to be read before the Association.

THE exhibit of poultry at the World's Fair begins October 16th and closes October 28th. The birds will be confined for twelve days. As October is a "moulting month" the score card will be very "educating" to the amateur.

THE American Black Leghorn Club has issued its new catalogue for 1893-94, and the catalogue will be found valuable to those who are interested in the breed. It can be obtained of Mr. Geo. Udall, Jr., Morristown, N. J.

WE still believe that a Standard for each breed, to be sold for ten cents, would be a better source of revenue for the American Poultry Association than the selling of a large Standard for one dollar, though both might be sold also.

THE *Michigan Fancier* is published at Detroit, Mich., by Mr. W. J. G. Prest, with subscription price at fifty cents per year. The editor is "Miller Purvis," which is alone a sufficient guarantee of the quality of its literature.

THE Ionia Poultry Breeders' Association will hold their second annual exhibition at Ionia, Mich., Dec. 5th to 8th inclusive, with Mr. B. N. Pierce as judge. There will be a good list of *cash* premiums, and every effort will be made to make the exhibition a success. Premium lists will be ready by November. For any information address the Secretary, Mr. A. F. Herbert, Ionia, Mich.

The Dog Fancier is a monthly publication by Mr. Eugene Glass, at Battle Creek, Mich. As we have no dog department we will offer the *Fancier* and POULTRY KEEPER at seventy-five cents, the *Fancier* alone being fifty cents per year.

THE 250 egg hen that could not lay over 100 eggs when given a test, is not as sickly a sight as the thirty-four pound champion butter cow at Chicago which could not produce over fourteen pounds. Claims, statements, and bragadocia sooner or later come to the surface with the paint rubbed off.

THE Howard County (Indiana) Poultry Association, recently organized, has decided to hold its first annual exhibition January 9th to 12th inclusive. The officers are Messrs. John B. Mugg Pres., G. W. Newell Treas., and L. C. Hoss, Kokomo, Indiana, Secretary.

IF our good friend Petts, of *Poultry Topics*, will state that the cuts he uses were taken from the POULTRY KEEPER and *Farm and Fireside* he will do justice. It looks much better than to place an imprint under them and grab them wholesale.

SOME poultry journals never discover a dishonorable breeder until he fails to pay for his advertising. Then the fellow is hauled up lively, not because he is unreliable as a breeder but because he is does not pay. Never strike an editor on the pocket book

KICK away the rooster. Read the article on our second page. Mr. Wheeler has demonstrated by actual experiment that hens will lay as many or more eggs when not with the males as when they are present But those desiring eggs for hatching purposes should select their best hens and mate with a pure-bred male.

THE oldest poultry paper is the *Bulletin*, of New York City, edited by Mr. J. E. Warner. Its subscription has been reduced from one dollar to fifty cents. The *Bulletin* is neatly gotten up, spicy, always interesting, and Mr. Warner aims to put it at the front. We offer the *Bulletin* and POULTRY KEEPER together, one year, for only eighty cents.

IF you wish to agitate something, and work a little in getting up petitions, let it be in favor of a parcels post, or some method by which eggs from pure bred fowls, for hatching purposes only, can be sent through mail by prepaying with stamps. When this is made a point the express companies will begin to come down.

IT must be very interesting to those who keep poultry for the money to be gotten out of the business to have the details of a banquet, with French terms for the bill of fare, placed before them by their favorite poultry papers. After awhile the editors will declare that poultry (papers) does not pay, and that there is no money in the business. The exultant man of to-day may be a "calamity howler" to-morrow.

OUR good friend Keller, who edits the *Ohio Fancier*, publishes his *own cut* and states that his father "was a noted Spanish merino sheep and poultry breeder." We can understand how a good-looking young man likes to show his "physiog," but we have some doubts regarding the statement made concerning his father. That he was a poultry breeder we can understand, but the first portion of the sentence is somewhat ambiguous.

THE *American Fancier*, published by Messrs. Blunck & Drevenstedt, at Johnstown, N. Y., issued its first number in September. It makes a creditable appearance, though in our opinion a mistake is made in imitating the *Fanciers Journal* so closely, as two papers nearly alike will not be of advantage in a field, and also for the reason that readers will not so readily patronize the imitation as long as they can get the genuine. We wish it success, however, and join in sending it a hearty send-off.

IF any one wants score cards with high scores they should engage Roberts, of California, to do the work. He cut a Leghorn only one point for color last year—head one-half and fluff one-half—which places that Leghorn away up on color. Comb, wattles, earlobes, neck, back, and wings were *perfect*. Roberts is a judge after the score-card man's heart.

MR. H. S. BABCOCK, Providence, R. I., one of the most prominent writers on poultry matters, and editor of the *Standard*, is also the author of "The Friendship of Learning" and other poems, neatly bound in a beautiful book, which is sold at $1.00. Those who know Mr. Babcock value his productions very highly, and while his lectures, essays, and articles on poultry are always instructive, his poems are also entitled to a high place in literature.

A WORD TO COMMISSION MEN.

There are hundreds of persons that desire to ship to commission merchants who handle poultry in the large cities, but they have no way of knowing who the merchants are or of procuring their addresses. We receive numbers of letters inquiring who sells poultry in certain cities. Would it not be well for merchants to make the facts known for their benefit, and also for the benefit of those interested.

COMMISSION MERCHANTS.

Many readers write us for the address of commission merchants, and asking where to sell. Unfortunately we have no means of knowing who are and who are not reliable merchants, nor have we any lists or directories of merchants. Enterprising merchants make themselves known by advertising, as must all who expect to do business. Our mission is to teach the readers how to produce the largest proportion of poultry and eggs at the lowest cost. The matter of selling the produce is something each individual must solve for himself, as it is outside of our province.

NEW BREEDS.

The *Bulletin* favors new breeds, and seems to consider "the more the merrier." It does not look with favor on the opposition to the admission of new breeds into the Standard, and says:

"Brother Jacobs sides with Uncle Ben in a common desire to destroy fancy poultry and reduce the number of breeds to a minimum. It is seldom that we see the two old veterans agree on anything, but it is sad that for agreement they should have selected such an improper point. All breeders are not tired of life and improvements, and it is to be hoped that when Brother Jacobs forsakes the hoeing of corn for the shoveling of snow, new breeds will be the features of the poultry industry."

What is the use of holding to breeds that are on paper only, and which do not *even exist*. Who has White Javas? We do not know of any breeder of them. Why allow all sorts of cross-bred nondescripts to enter. It would be well to have a *probationary* class for new breeds, allowing them five years to prove thier worth. Otherwise not only keep out the new but also get rid of some of the *trash* now in.

ALL ABOUT BROILERS.

This excellent book, by Mr. M. K. Boyer, is only twenty-five cents. It is a book for both the amateur and professional. It was written mainly to instruct the novice. Read the contents: Is Broiler Raising a Failure" How Much Capital is Required? How Much Land and How Much Time is Necessary? What are the Profits? Incubators, and How to Run Them. Brooders, and How to Manage Them. Feed, and How to Give it. Mistakes in Broiler Raising. Pure-breeds for Broilers. Good Crosses for Broilers. How Broilers are Prepared for Market. An Egg Farm. How to Build Houses. How to Feed Laying Hens. How to get Fertile Eggs. How to Market. How to Fatten. Caponizing. Pure-breeds the Best. Money in Ducks. How Large a Farm. Diseases and Remedies. Size of Breeding Pen. A Virginian's Egg Secret. French Lice Remedy. "Sauer Kraut" for Fowls. E. C. Howe's Broiler Food. Peterson's Food for Laying Hens. Peterson's Feed for Young Chicks. Poultry at the Experiment Stations. Price, twenty-five cents per copy, for sale by us.

McFETTRIDGE'S DUCK BOOK.

Mr. G. A. McFettridge is one of the leading authorities on ducks. He has hatched and raised over 100,000. He gives it all in his book, which is for sale by us. He tells all about the temperature for hatching, moisture, ventilation, how to trim the lamp, time card for incubators, brooding small chicks, food and care of ducks for breeders, feeding hens for hatching eggs, eggs for hatching, how to feed little chicks, how to feed young ducks, how to dress ducks for market, how to dress young chickens, the incubator house, brooder house, celery for feeding ducks, short notes, economy, sanitary conditions and medicines. Price, fifty cents per copy.

THE NORTHEN MIDDLESEX AT CLINTON.

The Northern Middlesex Association will hold their annual show at Clinton, Mass., January 2-5, '94, in the old skating rink. The building is particularly adapted for this purpose, having an immense area of floor room on the ground floor, thus making it very easy of access. They have always maintained that any show could and should pay its own way; this has been demonstrated by the society five times, and they now stand in such a financial condition that the coming show will probably be the banner show of New England.

The decimal score card will be used, and the judges will be all well known. The cards will be put up more promptly than ever, and all who have attended this show know that it takes about five minutes after the classes are scored before the cards are up. Now, commence to make your arrangements, and make the effort of your life to attend. They shall be heard from often, and the list will be ready for distributiou about November 20. If a list does not reach you, write to the secretary, Mr. A. A. Fillebrown, Ayer, Mass., and receive one by return mail.

PROFITABLE POULTRY FARMING.

This is a new book by Mr. M. K. Boyer, for sale by us, and it is a work that should be in the hands of all interested in making poultry pay. It treats of the growth of practical poultry farming, the requirements, the best way to begin, the value of crosses, the use of the thoroughbred, how to have hardy and prosperous stock, the success of artificial incubation, running an incubator and brooder on the farm, building an incubator cellar, colonizing the chicks, R. G. G. White's methods of feeding chicks, poultry as an adjunct, a butter and egg farm, size of hen yards for success, building hen houses for comfort as well as profit. feeding for eggs, Mr. Hunter's methods of egg farming, how to test eggs, poultry and fruit, broilers and berries, how the scheme works in Hammonton, specialties in vegetables, a general poultry farm, the Atlantic Duck Farm, duck culture for profit, size of houses, how the breeding ducks are fed, how the ducklings are fed, how to dress ducklings for market, and other useful points. Price, twenty-five cents per copy.

TOP VENTILATION.

From the inquiries of our readers, some of whom complain that their fowls are affected with blindness and swelled eyes, we surmise that many of them use top ventilators. Ventilation is certainly necessary at this season, but draughts which come down upon the hens are injurious, even in summer, if the weather is damp. A top ventilator may be useful or not, according to the direction of the wind. The best way to ventilate a poultry-house in summer is to leave the door and windows open, but the openings should be covered with wire mosquito-netting, or half-inch wire mesh, with the roosts back from the draught. It is not injurious for fowls to be in a draught on a warm summer night, but should the wind shift to the northeast, and the air become damp, they easily become affected. If the draughts comes over their heads the result is usually blindness and swollen eyes. The cracks and crevices are sometimes the sources of draughts also. All ventilation should be under control. The top ventilator is excellent if it is opened or closed according to the direction of the wind and the condition of the atmosphere.

HOW IT STRIKES US.

Some of our exchanges have been discussing "lessons in poultry," and they desire to get us in on the matter, too, as the following will show:

"A course of twenty-four lessons in poultry keeping would be of more practical benefit to the majority of farmers' daughters than a course of twenty-four lessons on the organ or piano.—*Michigan Poultry Breeder.*

"How does this strike you, Brother Jacobs?"—*Southern Fancier.*

We rather prefer the music lessons. There is something out of harmony to witness a pretty damsel wading in mud, slush and snow, but when she sits down and hammers out such operatic airs as "Lucy Did Lam Her Moor," "Lucretia Don't Board Here," or "Robert La Diabolical," it takes with us by unanimous consent. True, the air may not be very melodious, but there will be some first-class hollering, ranging the voice from A to etc., which will always be an enjoyable performance. If lessons are to be given in poultry we must begin with "What is an egg," and if some little miss should reply that it was something used for battering public speakers our nerves would at once be unstrung. But, as music hath charms to soothe even a savage, it might be used to good advantage on the score card controversy, while even the editors might be made to believe that they were brothers. Give us the music. True, we edit a poultry journal, but we always have, and will, be truthful. Lessons in chickenology will not do for the girls. It may answer for some great, awkward, gawky, strapping boy, but not for the dainty, lovely little girl. May her duties be *within* the house. The time has passed for women to do men's work.

ALBINOS AMONG ANIMALS.

Regarding freaks and curiosities, the *N. E. Fancier* clips an article from the *Scientific American* to confirm something that no one denies. Just why the circumstances are mentioned we do not know, but here is the extract:

A correspondent writing in Norwich, Conn., to one of our daily papers, calls attention to several rather remarkable instances of albinism recently observed among the lower animals. This season, he says, an unusully large number of albino birds have been seen in eastern Connecticut. A day or two ago three milk-white young robins flitted about in the trees of the Congregational church yard, Stonington. Some persons who doubted at first that the birds were robins, became convinced when a pair of mature natural-hued robins, putting in appearance, took charge of the freaks and coaxed them away from the neighborhood of a curious crowd who had gathered there. The little fellows were only just learning to fly, and two of the Stonington citizens finally captured and caged them. The birds are said to be getting on well in captivity. Two albino "red" squirrels were seen in the outskirts of Norwich about a fortnight ago. Abram I. Kinne, a farmer of East Plymouth, discovered a perfectly white crow in a nest of other normal little ones, which was built in an oak in the woods near his house. He has domesticated the queer bird.

To which Editor Hamilton adds the following by way of a reminder to us. He says:

"We insert the above as an argument against some of Brother Jacob's wild statements in regard to sports. He will see the point very readily."

It is easy enough to mention "wild statements," but they should be specified. Everybody knows that there are albinos, but there are a great many persons who do not understand how albinos come only when *wanted*, and how they spring up at a dozen points at the *same time*, and how some scoundrel can blackguard the character of men better than they because some other albinos were produced in competition with his. "Wild statements" are they? And such stuff as the above is paraded to sustain a lot of character villifiers who aim to prove such things as albinos, and yet they have done all in their power to make others believe that albinos are an impossibility except with *their* birds, thus making more "wild statements" that cannot be sustained than others can do in a decade. These Janus-faced men are *white* to-day and *black* when some other man has the audacity to claim white also. There are lots of albinos It is what we have all along claimed, but they are not owned by a *select few.*

DEATH OF FRANCIS A. MORTIMER.

Mr. Francis A. Mortimer, Pottsville, Pa., died in August, and in fulfillment of his wishes his body was cremated, the ashes to be deposited in the coffin with the remains of his mother when that lady is called away from earth.

Mr. Mortimer enjoyed a large law practice in his native city, and was one of the most highly respected citizens of that section. Strange to say, he had a contempt for lawyers, as he considered them dishonorable as a class, and requested that no meeting of the bar be held to pass resolutions regarding his decease. Being strictly honorable himself he always confided and trusted in others, and this confidence was more than once betrayed.

At the Indianapolis meeting of the American Poultry Association his friends made him their candidate for president, and although he declined to electioneer for the office, and refused to stop at the hotel where the canvass was conducted, he would have been elected on the first ballot had a vote been allowed, but the chairman—Philander Williams—appointed a nominating committee that nominated himself, and by getting control of the machinery no ballot was had. The memory of that piece of trickery cannot be effaced, and will always be a blot on the pages of the history of the A. P. A.

Mr. Mortimer was a regular importer, and cleared $5,000 in one year from his imported Minorcas. He organized the Langshan Club, being its first president. Refusing to lend his countenance to the injury of the character of Mr. W. O. Dakin, a conspiracy was formed to injure him. While he was really above any attack that could be made upon him, yet he keenly felt the imputations cast upon his White Langshans, and becoming disgusted declared that he would no longer be connected with a class of men whose sole aim was to promote their business by a system of abuse and ungentlemanly methods. Though his yards were filled with the choicest birds he took no part in associations or organizations.

Mr. Mortimer was also an admirer of St. Bernard dogs, owning some of the best to be found, and at one time contemplated going to Europe to buy some of the cracks in England and Switzerland.

The poultry fraternity has lost one of its purest and best men, and those who have wronged him are sinking out of sight, fading to the background. He was well known and to meet him once was to become acquainted, as his genial nature and gentlemanly bearing always won friends for him at the first meeting.

MOISTURE FOR EGGS.

Mr. C. R. Riggs contributes an article to the *Southern Fancier* which is well worthy of reproduction. Mr. R. gives his experience, and may probably set many to thinking. He says:

"The humidity of the outside atmosphere has no control whatever over the hatching of eggs in an incubator. Any one who will take the trouble to consult the signal service reports can ascertain that San Antonia is a dry place; dew here is as rare as the poets' day in June, and during the past thirty days there has not been a single night in which damp under-clothes hung in my bed-room will not be perfectly dry by morning. I have chicks frying size that have never seen a drop of rain fall. So much for the outside humidity of the atmosphere; the inside of my incubators are as innocent of moisture pans as the inside of a powder can, and have had no moisture since the last hatch of chicks dried off, yet one of the machines are hatching to-day, and the chicks look just like those that are hen hatched. I long ago learned by sad experience that moisture in an incubator is a positive detriment to the hatch unless there is a current of air passing through the machine. If a hen furnishes moisture for her eggs how is it her nest dries out so quickly after you sprinkle it? Most persons get nervous and give the machine unusual attention about the time the hatch is due. Right here is where the trouble comes in, for more attention is needed during the first week than the other two. Anyone who will think for a moment will believe that the embryo chick two days old can not stand the variations of heat so well as one of two weeks old. Let any doubting Thomas take a good machine and half fill it with eggs and run it carelessly for ten days, at the same time take good hens and give them enough eggs to fill the other half, and after ten days take the eggs from the hens and put them in the machine with the others, and mark the result at hatching time.

Mr. Riggs states that he lives in a dry climate, yet he uses no moisture unless a current of air is passing through the machine. As such currents are usually dry and warm we agree with him. We have all along advised no currents, no moisture, and no disturbance of the chicks. That the hen seeks a moist place has also been exploded, as the eggs give off moisture instead of absorbing it. We commend the above to the careful perusal of all who are interested in hatching chicks.

THE GRAND KINGERINGUM.

Mr. George Seeger, Jr., of Lafayette, Indiana, has been appointed Superintendent of the Poultry Department of the World's Fair. We do not know Mr. Seeger, but have no doubt that he will be able to fulfill all that may be expected of him.

We were rather surprised, on reading the notice of Mr. Seeger's appointment in the *American Poultry Journal*, to find the following, which is a portion of the article referred to:

No organized effort was made to secure a superintendent—no authoritative body urged its claims to recognition. The American Poultry Association, the only body that could present a scheme of action, did make a move in the direction of securing a superintendent, but, so far as the public was permitted to know, the committee's work proved of little avail. Unless it be that Mr. Seeger's appointment is approved by Mr. Pierce, who was named as the Associations choice, the influence of the A. P. A. can be quoted at zero. But let that be as it may, the broader fact remains that no action by poultrymen organized for this purpose has been taken towards making the World's Fair show a cosmopolitan one. The causes leading to the apathy need not be inquired into.

The expression "unless it be that Mr. Seeger's appointment is approved by Mr. Pierce" is rather bold. Mr. Pierce was *railroaded* in as the choice of the A. P. A., at Charleston, on the eleventh hour, when the majority of the members had gone home and but few were left. It was a proceeding which should have been condemned as there were other members of the A. P. A. who were candidates. It was anything but creditable to the A. P. A., and had it been sprung upon the meeting earlier it would have been frowned down.

We understand how Mr. Seeger was appointed, and how he has been kept posted of what was going on, and why it was more profitable for one to *judge* rather than to superintend. Everything has worked the way one or two desired, and although it was considered best not to push the A. P. A. endorsement, yet we can assure the editor that "Mr. Seeger's appointment is fully approved by Mr. Pierce"—very fully.

And the great big cat is going to get out of the bag too, and the little how and wherefore, from the beginning on the live stock committee to the present, and the poultrymen will some day know why *they* received no recognition, and why everything has worked in the interest of a few men who have used the A. P. A. as a cat's paw to pull out their chestnuts.

We have nothing to say against Mr. Pierce as a *judge*. We believe the *pay* of a judge at Chicago is better than that of superintendent, and what is termed "superintendent" is to arrange the coops and care for the birds. Mr. Buchanan is the real superintendent. The selection of Mr. Seeger is no doubt satisfactory. So would be the selection of Mr. Pierce as a judge. This whole thing has been a battledoor and shuttlecock affair, and but for the attempt to drag the A. P. A. into taking sides with one of the candidates no notice would have been given the affair.

Mr. Seeger has been kept well posted all along, and he is not at all surprised, and we may add that the secrets of the thing are coming to the surface already.

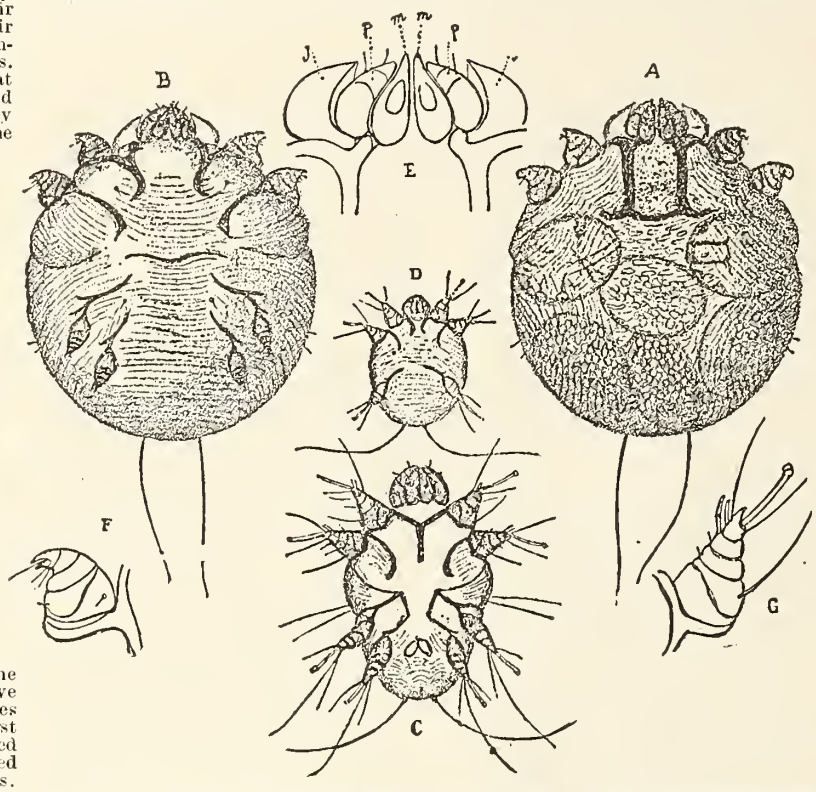
BUMBLE FOOT.

Bumble foot simply denotes the corn or lump so frequently found in Cochins, Dorkings and other large varieties, that are compelled to descend from the perches on to a hard board floor. Apply lunar caustic; pigment of iodine applied daily will be beneficial. If the corn appears to contain matter, it should be opened and the pus pressed out, after which it should be well washed out with warm water; and after a day or two apply the caustic, as directed. Compel the fowl to sleep on straw during treatment.—*Poulterers' and Farmers' Guide.*

SCALY LEGS IN FOWLS.

Through the courtesy of the *Fancier Journal* we use the cuts showing the scaly leg parasite, of course highly magnified, and reproduced from the *Feathered World*, of England, which says that in a recent number of the *Eleveur*, M. P. Megnin, the expert poultry fancier, gave some very interesting details concerning scaly legs, upon which I base the following remarks: For a long time it has been known that poultry are liable to an affection of the legs characterized by a superabundance of the scaly secretion of the epidermis, which has the effect of rendering them greatly enlarged and deformed. It has been compared by some authorities as resembling an affection which affects many human beings, called *ichthyosis*, in which the epidermis also becomes thick and scaly; but it was only in 1860 that the true nature of this affection was established. M. Reynal, at that time Clinical Professor at Alfort College, gave some fowls attacked with this complaint to Messrs. Lanquetin and Ch. Robin, for them to study. These savants discovered upon the legs of the fowls an acaridian parasite of a new species, which the latter gentleman described and illustrated in a very elaborate manner, under the name of *Sarcoptes mutans*. The affection in question was, therefore, a true scab. Above, readers will see an illustration of the leg of a Langshan cock attacked with scaly leg and also one showing, for comparison, the leg of a healthy fowl. MM. Reynal and Lanquetin, in their notes upon scaly legs, state that it is their opinion that the complaint can commence either at the head or at the legs. This is an error, it commences always at the legs, and it generally remains localized upon them, but not always, as stated by Neumann, who asserts that the scales of the head (comb, etc.) are not due to the same cause as scaly legs. Nevertheless, we have had under our observation many instances of true scale, or scab, of the comb amongst cocks which were at the same time affected in the legs. These latter had inoculated their heads in scratching with their claws. Scaly legs have also been noticed among turkeys, pheasants, partridges and even cage birds, but the heads of these did not appear to be subject to scab.

HEALTHY LEG.



PARASITE (*Sarcoptes mutans*) present in the disease known as Scaly Leg, *magnified*: A., Female front view; B., Back view of ditto; C., The male; D., Six-legged larvæ; E., Rostrum; *mm*, mandibles, *pp*, feelers, *jj*, cheeks; F., front leg of female; G., Ditto, male, nymphs and young female.

DISEASED LEG.

Since writing the foregoing, however, an instance has been found in which a pigeon's body was affected by this scaly disease. In 1885 M. Cadiot met with a Homer which for nearly a year had its body denuded in several spots, the feathers breaking close to the skin, and from their roots on a slight pressure of the fingers a white powder was ejected. At the end of the feather shafts was a little heap of whitish color, easily reduced to dust, composed of epidermic products, in which were to be seen by the microscope a considerable number of acaridæ allied to the *Sarcoptes mutans* of the legs, and to which it has been proposed to give the specific name of *lævis*. Upon the advice of M. Cadiot the pigeon in question was submitted for a certain time to daily sulphurous lotions, to which the affection yielded.

In his work *La Langshan*, from which our illustrations are borrowed, the author, M. Rouille, says of that variety: "Like all the Asiatic breeds, it is subject to scaly leg. Painting for some days with a medium hard brush dipped in a mixture of neatsfoot oil and rectified petroleum suffices to restore the pure slaty color to the legs. Reports which we have tried to obtain as to the soils which give rise to this malady in birds have been contradictory." In a footnote M. Rouille says: "Scaly leg is considered by some pathologists to be a skin disease analogous to psoriasis (Laboulbene), by others as a parasitic skin malady, caused by acaridæ. Robin, Megnin, Frohner, etc., have discovered as present in the disease *Sarcoptes mutans*, which are capable of localizing themselves on any part of the body."

It is under the shelter of the large scales of the leg front and above the claws that the *Sarcoptes* commence to dig for the scales are there larger and more suited to their operations. From thence they spread all over the leg, but not going above the leg feathers; the claws are also invaded. The scales of the legs and claws are raised by the irritation set up by these parasites and (as will be seen from the illustration given of a diseased leg) the member becomes considerably enlarged.

When first attacked the fowl does not seem concerned; it is lively, and to all appearance in its usual health. But after a time it commences to lose sleep, loses flesh, and eventually dies worn out. We have noticed this result many times. The course of the complaint is slow; it takes it five or six months to go through all its phases. If we examine the tubercles which are formed about the legs of a bird affected with scaly legs, we perceive that their surfaces are unequal and jagged, of a dark color, which color is due to dirt, and very superficial; the normal color being white. These tubercles can easily be torn off; then we find that they are composed of stratified layers of a pearly white substance, finely scaly, powderly, giving to the touch the sensation of French chalk. The female mites resemble little globules, lying side by side, and motionless; their color is white, like the crust of the scale. To examine these parasites microscopically, it suffices to scrape lightly, with the blade of a small knife, the inner side of the scale, and to place the production on a three inch by one inch slip with a little water, under a covered glass, one will then see besides the epidermic cells, the egg-bearing females and their eggs, their larvæ, which run to and fro between the superficial layers of the scale, and which after passing through an eight-legged stage develop into males and females, which pair, and are, as a rule, only to be found on the outer surface of the scale.

I should like to remind readers, and fanciers generally, that scaly leg is contagious, but in an insidious manner, nevertheless sure. That is why the various occupants of a poultry yard become subject to it, one after another, when a bird so affected has been introduced in the yard; when a yard is so affected, it is very difficult to get rid of the disease. Complete isolation of birds affected with the disease and thorough disinfection of the house and run is therefore advisable. This complaint is confined to birds. There are, as is well known, many remedies for scaly legs, the object of one and all being the killing of the parasites present and the removal of the chalky growths. In "Poultry for the People," Mr. Comyns advised dipping the legs of the birds affected with the disease in a bowl of kerosene oil, at intervals of a day or two. The growth will then easily rub off, and the natural appearance of the legs may be restored by applying a little vaseline. Mr. Tegetmeier says: "The legs may be soaked in warm water, and the crusts removed, and the legs washed with carbolic soft soap, as made for dogs." Mr. Vahle advises in his "Manual of Poultry Diseases" washing thoroughly the parts affected, using a hard brush, with soap and warm water, to which a little bicarbonate of soda has been added. Dry well, and apply as an ointment one part of sublimed sulphur mixed thoroughly with four parts of vaseline, worked well in between the scales.—*Feathered World, Eng.*

BLACK JAVAS TO THE FRONT.

There are but few Black Javas bred, and they have been greatly overlooked. We are pleased to have one friend of the breed step forward and claim that they are superior to the Plymouth Rocks, for it is an evidence that they deserve recognition, especially when such an advocate as Mr. R. W. Davison, of Glendola, N. J., endorses them. Mr. Davison is a *practical* poultryman, and an able writer on poultry subjects. He sent us a confidential letter, but we ask forgiveness for using it publicly. Mr. Davison writes as follows of the Black Javas:

Allow me to state that this letter is not intended for publication, but for your own private ear if you have such a thing.

You have, at various times, rather slighted the Black Javas. Now I do not breed them although *we* do, *i e.*, my uncle and partner. I consider the Black Java superior to the Plymouth Rock in carriage, beauty and egg laying. This is a broad statement, but true, as we breed both varieties and have a good chance to compare. We have sold more eggs from the Black Javas than from any other breed we handle excepting Bronze Turkeys. I will not enlarge more, as time is valuable to you at least.

I inclose letter from Massachusetts. The Black Javas he speaks of are from us; he has had them for two years now. In fact the whole letter is interesting, especially the eggs layed by his one to five years old ducks. While I am about it I will inclose another letter lately received from Washington.

The letters referred to were sent as a confirmation of Mr. Davison's claim. The Black Java is known to be hardy, for from it the Plymouth Rock received its start, and we are pleased to know that there is at least one breeder of the *pure* article, as they are scarce, who believes so strongly in the breed. Knowing Mr. Davison personally we attach great importance to his opinions.

A MICROBE KILLER.

In a lawsuit of Radam *vs* Eccles, and Eccles *vs* Radam, over "Radam's Microbe Killer," which is supposed to preserve articles, as well as destroy microbes, and which is patented, the result was that Dr. Eccles, an eminent chemist, gives the following as his formula:

Sulphurous acid, U. S. P.....4 ozs.
Commercial sulphuric acid,.....4 drs.
Muriatic acid.....2 to 10 drops.
Red wine.....1 oz
Water enough to make.....1 gal.

This preparation, or better still, the sulphurous acid and water alone, will act as a preservative of fruit, meat, etc., says the *Druggists Circular*. At the trial, Mr. Goodman, Radam's New York Manager, "reluctantly and under oath," calculated the cost of the Microbe Killer at less than two cents per gallon, although they retail it at three dollars per gallon. The net cost of the preparation made by the above approved formula is from five to six cents for about four gallons when made in quantities.

Dr. Eccles remarks that such patients as a mixture of this kind benefits can thus be supplied at a very much less cost than three dollars per gallon, and still allow a handsome profit, and he adds the caution that "those who get bad effects from its use should avoid it as dangerous to health. Such remedies should not be taken haphazard, but under proper advice and with caution. As was said in the article of September, 1889, it is 'all right if used aright but otherwise all wrong.' It is utterly absurd and dangerous to public health to assume it to be a cure for every disease."

HARDINESS IN BREEDS.

There are a great many breeds that excel those in general use, and they are first-class layers, but the experience of farmers has prevented the introduction of some of the new breeds on farms because they are lacking in hardiness. The Plymouth Rock is perhaps as widely distributed as any breed, and it is a favorite, yet it is neither the best breed for laying nor for market. On the table the Dorking is as far superior to the Plymouth Rock as it is possible for two fowls to vary, but the Dorking is not as hardy as the Plymouth Rock, and the chicks are difficult to raise. Could a contest be made between a Hamburg hen and one of the Plymouth Rock breed the probability is that the Hamburg would greatly excel the other, but when winter sets in the Hamburg is not as capable of enduring the cold as the Plymouth Rock, and is more subject to roup. Nearly all readers inquire which are the best layers. The inquiry should be for the hardiest fowls. The Plymouth Rocks, Brahmas, Cochins, Wyandottes and Leghorns seem to hold the first places, and it will be a long time before they are supplanted by any new breed unless such new breed combines hardiness with extraordinary egg production. The Houdan and the Dorking take the lead as table fowls, but they are lacking in some other respect. The Indian Game is also a fine table fowl, and seems to be hardier than the Dorking, but it is not yet well known.

In selecting a breed, let the first consideration be for hardiness in preference to all other qualifications, as such fowls give the largest profit for an entire year.

CROSSING WITH WYANDOTTES.

One of the best uses to which the Wyandotte males may be put is the mating of them with the large Asiatic hens, in order to produce broilers and market fowls. The Light Brahma and Wyandotte is an excellent mating, the Brahma hens being preferred, the males to come from the Silver Wyandotte, though some are favorable to the White Wyandotte. The result is that the cross-bred birds will possess yellow legs and skin, as well as compact form. Both breeds are hardy, and that is a very important point. The pullets of the cross should be choice layers, though they may not quite equal the Leghorns, but in raising broilers or market fowls no attempt should be made to secure choice pullets for laying. The rose comb of the Wyandotte and the pea comb of the Brahma are advantages, as there is a smaller surface exposed to the frost. The bright, golden-yellow legs of the Wyandotte cannot be overlooked, as in that respect it stands above the other breeds.

SENDING EGGS TO MARKET.

The number of eggs that are broken on the journey or cracked by the cold is quite large, and those of our readers who expect to ship their eggs in order to get better prices cannot be too careful in packing them. The egg-crates should be very strong, as they are handled roughly, and they should also be warm. The eggs should be placed in the paper partitions and the insterstices filled with oats; over each layer of eggs place, also, two thicknesses of brown paper, and lay several newspapers over the eggs before closing the lid and fastening the crate.

RESTING EGGS FOR HATCHING.

The able "*Gallus Stanleyii*, in the *American Poultry Yard*, criticises certain remarks appearing in the POULTRY KEEPER, which we present below, our object being not to discuss the subject so much as to let our readers have the opinions of others, as this paper is "not all orginal." The writer says:

As a free lance in poultry journalism I feel at liberty to criticise or commend anything I see in this publication or in any of your contemporaries. In a recent number of THE POULTRY KEEPER, and, therefore, presumably from the pen of P. H. Jacobs, I find two items upon which I wish to comment.

Here is number one:

"If all the breeds possessed the small pea comb of the Brahma, more eggs would be laid in winter. It is well known that the larger the comb the greater the surface exposed to the effects of the frost, and, as the Brahma is favored with the pea comb, it receives the distinction of being an 'excellent winter layer,' when in reality it is simply better protected from the cold. What is known as the pea comb is 'a triple comb, resembling three small single combs joined together at the base and rear, lower and narrower at the front and rear than at the center, and distinctly divided, the largest and highest of the three single combs being in the middle.' On Brahma hens it is exceedingly small. It is a characteristic that should be attached to all future new breeds."

I commend this item, because it contains the statement of a valuable truth. I think, however, the last sentence should be modified to read as follows: "It is a characteristic that should be attached to all future new practical breeds." The word "practical" is inserted because there may be some new ornamental breed produced whose beauty may be heightened by having some other comb than a pea. Personally, I admire the appearance of a pea comb, but I can readily conceive of a breed that it would not ornament so much as the rose or the single comb. But as THE POULTRY KEEPER professes to be devoted to practical poultry, it is probable that the editor thought the word practical would be mentally supplied. Two of the new breeds—the Argonaut and the Yucatan—have a pea comb, and they are claimed to be practical fowls. Their originators evidently have anticipated this advice.

And here is number two:

"Some time ago the *theory* was launched out by some one who had it 'in his mind' that eggs should rest for twenty-four hours after arrival from the breeder before placing them under a hen. A reader who bought eggs from a breeder writes us as follows:

"'Is it necessary that eggs be allowed to rest for twenty-four hours after being received from a distance before they are set? I got 100 eggs from a dealer, and though the hens sat very faithfully and everything seemed favorable for a good hatch, I got only twenty-seven chicks. The dealer claims that if I set them as soon as received it would be a sufficient explanation for the poor hatch. Is this true?'

"It is all nonsense. There is no vacuum in an egg, and the contents can not shake. If they do not *rest* in the *nest*, then we are unable to explain any better method of 'resting.' We have taken eggs from a box, placing some under hens immediately, and also '*rested*' some. We noticed no difference in the hatch. 'Resting' has served as a pretext for some to explain poor hatches, and that is about all there is in it. The proposition on its face is ridiculous, for when an egg has to rest, to allow the contents to re-adjust, such an egg will become rotten. Once the contents are disarranged there can be no re-arrangement."

With number two I can not agree. The theory was not sprung upon the public from mere mental cogitation, but was announced as the result derived from practical experiment. The theory is several years old, and was first announced by a French experimentalist, whose name I do not at this writing recall. This gentleman constructed a machine in which the egg was placed and subjected to a rapid rotation or whirling. Some of the whirled eggs were set immediately and some allowed to rest twenty-four or more hours, according to the amount of whirling to which they had been subjected before they were set. The results were that the eggs which were set immediately after the whirling either failed to hatch, hatched poorly or brought forth deformed chickens, while the eggs which were rested before setting hatched much better than the others. The experiments were repeated a number of times, and the same result followed each experiment. Based, as it is, upon carefully conducted experiments, the theory is by no means "nonsense." The fact that the editor has "taken eggs from a box, placed some under hens immediately, and also '*rested*' some," and "noticed no difference in the hatch," is inconclusive. These eggs might not have suffered from transportation while the very next lot might have been more carelessly handled, and would have been benefited by resting. It doesn't do to rest too much upon a single experiment or an experiment where the elements are so uncertain, as they naturally must have been in the one tried by the editor.

I advise every buyer of eggs for hatching to allow the eggs to rest for twenty-four to forty-eight hours before setting them. The rest, if it does no good, certainly will do no harm, and the chances of a good hatch, I believe, will be increased. I think it would be a good plan for every breeder to imprint in his circular or upon his shipping label, or both, the words: "Notice—Eggs which are shipped by express should be unpacked immediately upon their arrival, laid upon their sides in some cool place, and be allowed to rest undisturbed from twenty-four to forty-eight hours before setting. By observing this precaution the chances of a good hatch will be increased."

And now I wish to swing partially over to the editor's side. The dealer, who claimed that immediate setting of the eggs would be a sufficient explanation for the poor hatch, is about as far in error as I conceive the editor to be. Immediate setting might or it might not be a sufficient explanation. If the eggs were in a condition where "resting" was imperative, it might be a sufficient explanation, but resting is not always imperative. It is always advisable, for we can not tell in what condition the eggs are, but many sittings may be so carefully packed and handled that the jarring of transportation may not affect them unfavorably. In such cases resting would not make any difference with the hatch. If we could distinguish the eggs that need "resting" from those that did not, we could then rest them or not, as the circumstances demanded. But as we can not do this, the only safe way is to allow them to "rest" after receipt and before setting.

The subject is worthy of discussion, and there is room for further experiments. In a future issue we will have more light to present. Of course we are always willing to yield to facts and evidence, but we believe that the question is still open for more discussion.

HOT SHOT AT THE FANCY.

The agricultural editor of the Baltimore *Sun* is not only an expert poultryman but has judged hundreds of poultry shows. His views should, therefore, be entitled to great consideration. In a recent issue of the *Sun* he discussed the breeds from a standpoint of utility and compared them with birds bred for the showroom. We select portions of the article for comment. Here is what he says of the exhibition Game:

The Game breeds as called for by the American Standard of Perfection and those bred regardless of points are radically different. The Standard bird, aside from plumage, is not much for style, carriage, action or beauty. In the exhibition room he is a sort of wonder to the general visitor, and inquiries are made as to what the "legs and neck breed" is. It is this extravagant idea, or undue forcing of nature, and the abnormal development of certain characteristics that rob poultry of their intrinsic value or real utility and experience.

Throughout South Carolina and Georgia there are flocks of black-breasted reds and muckwings that for years have bred Standard plumage, but they are in shape and form the old-timers, not on stilts or adorned with crane necks, but after the pattern nature intended them to have. They represent the survival of the fittest of the flocks, not selected for freak shapes, to render it almost impossible to breed to Standard requirements.

Why one should desire to breed the Game until its beauty is confined to its neck and legs is a mystery unless it is for exhibition only. But such breeders will always claim something in their favor as birds for utility. At the recent New York show an old breeder, who turned up his nose at the long row of stilt birds, was surrounded by a score of judges who could not judge the Pet Games. When asked how such Games should be judged he laconically replied, "Fight 'em." He cared nothing for a white speck on the plumage, but he knew that his birds were superior in vigor and strength to the others. The Cochin also is mentioned as follows:

The excessive leg and toe feathering required by fanciers for Buff Cochins has been secured at the expense of egg-laying. Some years ago Brahmas came very nearly being ruined by a clause giving extra points in scoring for fowls that were over Standard weights. To-day the Games, those that can truly be classed as Standard, may almost be called freaks. Their egg production has greatly fallen off, while their table quality is not to be compared with the Games that are not bred after Standard styles, and the hens are becoming very indifferent mothers. All these results are unnecessary and produce more harm than good.

The above should open the eyes of those who have a desire for a Standard that is framed on common sense. It is time to call a halt to boy's play and make the breeds what all desire. On this point the editor says:

There is no reason why Standard requirements should be of such a nature as to in any degree interfere with the utility qualities in any of the breeds. The term fancy should not be recognized. A man may fancy any breed, or even mongrels, but that fact should not cause the fowls to be classed as fancy. They are either pure bred, crosses or mongrels; pay your money and take your choice. Some breeds can be truly considered more ornamental than useful or profitable. The word fancy is a misnomer; it is misleading. In the South there are flocks of Games to-day that have been bred because of their good general purpose qualities. They are not only crosses, with no pretension to breed, but the best have each year been saved as breeders. For layers, mothers and Spring chickens, as well as fighting, they can knock all the Standard Games out in one round.

Fashion in pure bred poultry should not be tolerated when it interferes with usefulness or tends to deteriorate the qualities of fowls, and rob them of their utility. Poultry that are bred alone for show do not advance or in any way bring to the front such requirements as should follow poultry raising. At the coming meeting of the American Poultry Association in Chicago next October there will be reports of committees on revising the Standard breeds of poultry. That valuable suggestions can be made goes without saying, but in many cases it will be better to let well enough alone.

The Standard should explain in the most intelligent way each and every breed. It should give in prolific outline the characteristic shape of each breed. Then, with these things properly fixed, they should remain so always. There should be no standard tinkering. Once establish a Standard for each breed, then let the idea remain. No one man's ideas of shape or strain should be used. All prejudice should be thrown aside. Put on record in the Standard what the ideal of each breed should be, and have the markings intelligently described so that no two meanings can possibly be attached to any sentence. Then no matter how many varieties of score cards there may be if each is based on Standard requirements all will be aiming at the same target.

Comparison judging, if the same loyalty to the Standard is observed, should also give satisfactory results. In fact, with an intelligent, conscientious judge, comparison is merely mental scoring. He carries in his head the outs instead of jotting them down, as he does when using a score card. The aim of the Standard should be to have all breeds bring out their greatest utility so that Standard requirements and practical worth will be one and inseparable.

With utility will follow comparison judging. If the "foolishness" was left out of the Standard, especially the senseless disqualifications, there would be some improvement. When a brother (same sire and dam) of a high-scoring Brown Leghorn is disqualified for a speck of white on the tip of the wing it means that a well-bred bird is thrown out for a very small matter. The so-called "fancy" and "pet" stock should be separated from poultry for practical purposes. Points are necessary to preserve the purity of the breeds, but it is not necessary to place the points on those portions of the body preferred by showroom exhibitors.

THE DRAIN OF FEATHER GROWING.

I have never realized so forcibly as this season the severe drain on the vitality of a fowl during the moulting season, says Mr. Webb Downell, in *Country Gentleman*. This drain is heightened when, as is the case with my own Brahmas and Plymouth Rocks, they continue to lay liberally while shedding their feathers. In the winter, spring and early summer I find it difficult to keep my hens from becoming too fat, although fed largely on nitrogenous food, with no corn whatever, but now the Brahmas, a breed readily inclined to take on flesh, have apparently hardly an ounce of fat on their bodies, though fed a liberal ration of fattening food in addition to their usual bill of fare—and such appetites! They have to eat to sustain life, to grow a new crop of feathers starting all over their bodies, and to form the eggs they are very generously producing.

The strongest need for food comes, I think, for the new growth of feathers. If one were able to count the feathers that in a comparatively brief space of time at this season of the year are produced by a hen, he would be able better to appreciate the effort which nature has to make in fitting new garments to the bodies of our fowls—and just here comes in a very practical point in the breeding of poultry, and especially Brahmas. A fowl with an enormous coat of feathers can not now be expected to do more than live and grow the feathers. It is for this reason that a Cochin goes completely out of the business of egg-production during some months of the year, for her tremendous covering is a work of time as well as of strength.

Heavily-feathered fowls for this reason are not the most practical. We get in the show rooms more of the English type of bird than is strictly called for by our standard—heavily and somewhat loosely feathered, a handsome bird from an artistic point of view, but far less prolific in eggs than the Brahma of closer feather, such as must be produced to conform well to the American *Standard*. This calls for a concave sweep of the back of the female from the shoulder to the tail, but the heavily-plumaged Brahma is very apt to have a convex outline to the back, with often a veritable Cochin "cushion." The efforts of fanciers then to get these heavily-plumaged birds is a distinct injury to the breed, and should be discountenanced by every true friend of the Brahma, which is, I firmly believe, the most beautiful and among the most profitable, if properly bred, of all the breeds. Let the Brahmas be kept up to weight, but let the Cochin fluffiness of feather be left to the Cochin breed.

As there is so great a drain upon the fowl at the moulting season the utmost good care is needed to keep the birds healthy and vigorous, and to keep them laying also, not so abundantly as at some other season of the year, of course, but still with sufficient regularity to permit them to "pay their way." A little extra care and good feed are needed to accomplish this. Feed oftener than at other times, but let the food be of a kind to supply the new wants of the hen as well as the old. Meat ought to be fed generously at this time, and milk if one has it, for these two articles furnish splendid material for the growth of feather, as does also fish if one is situated so as to obtain it economically.

OVER PRODUCTION OF POULTRY.

Overproduction of poultry and eggs is a possibility, but that such has at any time occurred is doubtful. The fear that the market may be overstocked has deterred some from venturing largely in poultry, but such fears have never been realized. It is not unusual to find the markets full at times, not only of poultry and eggs but of all other kinds of produce, though there is a great difference in quality. It has been said of butter that there was no intermediate kind, as butter was either good or bad. If not of the best quality it was of no value, and if but little inferior to the best there was no place for it whatever. Such may be said of eggs also, and it may be extended to poultry.

Quality regulates the prices. A difference of only one cent a pound on poultry or a dozen eggs seems insignificant, but when a large business is conducted the difference is great. As long as there are several prices for the products the market is overstocked with the lowest-priced articles only. The best will be in demand and will sell for all that it is worth; but the term "best" means a great deal, for it includes everything pertaining to superiority. There is a large field open for those who aim to supply the market with the best, and every season they will find that they have room for improvement in order to excel. There is also much to learn in order to know how to provide the market with the best, and the market will accept it readily at all times and without regard to the quantity of inferior grades that may have been offered for sale.

There is something more to look after than feeding and caring for the fowls. To produce the best, the hens must be of the best. This demands the use of the breeds. No farmer can afford to raise chickens for market from the common stock, for the reason that no system of feeding will enable the inferior birds to equal their superiors. With the breeds for the purpose the market can be supplied with something choice, and there will be little or no competition. Overproduction of the best is a result not yet attained. It is anticipated by many, and as long as the farmers will not improve their flocks, the market will always demand more.—*Mirror*.

SHAPES OF EGGS.

Various attempts have been made to account for the diversity in shape seen in eggs. A recent study convinces Dr. Nicolsky that the differences may be all traced to gravity, and he finds his idea confirmed by all the eggs in the zoological collection of the St. Petersburg University. He supposes that pressure by the sides of the ovary tends to elongate the egg before the shell has hardened. In birds which keep a vertical position while at rest, as do the falcon and the owl, the soft egg is made short by the action of the weight of the body against the ovarian pressure; while in the birds that like the grebe, are nearly always swimming, the egg is lengthened because the bird's weight acts with the compression by the ovary. The egg is made more pointed at one end than at the other in birds that, like the gullemot, are frequently changing their position—sometimes swimming and diving, sometimes perching on the rocks, etc.—*Scientific American*.

WARTS ON CHICKENS.

Correspondents of our *Home Journal* give the following remedies: "Dissolve blue stone in water, cut the wart off, and with the knife scrape out all the seed that can be taken out, then with a mop apply the liquid blue stone. If taken when the wart first appears the above remedy will make a cure. Use as often as needed, as more than one application may be necessary." Another is: "Rub carbolic acid freely on the warts of the chickens about twice. Use clear, purified carbolic acid, and unless the warts are different from the Texas style, they will not wait to make a statement."

MORE ABOUT "NO ROOSTERS."

The *N. H. Mirror*, Manchester, N. H., one of the best papers published in New England, discusses the experiment made by Mr. Wheeler, and says:

Some valuable experiments have been made by Mr. W. P. Wheeler, of the New York Agricultural Experiment Station, in keeping males with laying hens. Four pens of pullets were selected, two pens containing males with the females, and two pens containing females but no males. The food and other conditions were the same for all. The results were that a pen of pullets, kept without a male, produced eggs at thirty per cent less cost than an exactly similar pen of females in which a cockerel was kept. The pullets with no males laid twenty-two per cent. more eggs than the others. The fact was demonstrated that pullets will lay fully as many eggs when no males are present as when they are with the pullets, and if there is any advantage it is in avoiding the use of the males.

When the cost of keeping an enormous number of males is considered, the matter of dispensing with their use is important, especially when large flocks are retained. Of course, if eggs are to be used for hatching purposes a male must be kept, but a single pen of selected hens will provide all the eggs necessary for producing chicks. If as many as 500 pens are kept the cost of keeping males with them is equivalent to the cost of the food of fifty hens. Now, as the hens will lay more eggs when there are no males with them, there is not only a saving of food but an increased number of eggs.

It may be asked why this effect should be caused, and how it is in any way possible for the male to influence the number of eggs. Really the male does not influence the number, but his annoyance of the hens, his quarrels with his rivals, and his selections of the choicest morsels for his favorites, are little matters that detract from the comfort of the hens. They are more quiet in disposition and better contented when he is away from them. When present he is a ruler and compels them to follow him. When absent from him each hen can follow her own inclinations more independently.

Another advantage in having no males is that the eggs from hens that are not with males will keep fresh four times as long as will eggs that contain the germs of chicks. It is an easy matter to preserve eggs that will not hatch. In the incubators such eggs have sometimes been known to be subject to a temperature of 103 degrees for three weeks and come out with little or no damage, while fertile eggs were rotten from the same conditions. The fertile egg begins to decay rapidly after the germs die.

The question of males or no males has now been settled, for the experiment has demonstrated as a fact a matter which has before been claimed but which was not positively confirmed. It means not only better keeping qualities of the eggs, but also a lessening of the cost as well as saving labor, getting rid of quarrelsome males, and fewer sick hens and pullets.

It will be noticed in the third paragraph of the above that a number of reasons are given for the failure of the hens that were not mated with males to surpass the others. The male is sometimes a nuisance, causing annoyance, and is often a disturbing and domineering individual in a flock.

SOMETHING FOR MR. KINNEY.

Mr. A. J. Aldrich, Orlando, Fla., writes in regard to the letter of Mr. A. W. Kinney, Yarmouth, Nova Scotia, in our last issue. Mr. Aldrich thus comments on the suggestions of Mr, Kinney, and we will be pleased to have Mr. Kinney reply. Mr. Aldrich says:

I have read Mr. A. W. Kinney's letter, in the September POULTRY KEEPER, page ninety-six, and wish I could ask him some questions, but, as I cannot do it in person, will with you. He says "I find there is nothing that will equal the exclusive use of meat and bone," meaning no doubt for the production of eggs.

Further on he says, "to mix with the meat and bone I use a combination of grain," and further on he says he uses a mixture of grain (whole grain I suppose) oats, peas, and beans. These three quotations do not seem to agree—First the exclusive use of meat, which it seems is not exclusive, but is mixed with four kinds of grain ground together, and then he feeds three kinds of whole grain. I infer, however that but little whole grain is used, and that only to induce the hens to exercise, or scratch. I cannot help wishing he had been more definite about the quantity of ground grain mixed with the meat, for it appears that he cooks the meat, gets the bone out, chops it by itself, and then grinds the bone and feeds it separate.

Can he give any good reason why he cooks the meat? There is considerable work in that, and he goes in for the saving of labor. Why not grind the meat and bone together, and feed it uncooked. It seems to me that to make the main feeding material of cooked meat must be rather expensive, but meat may be very cheap there, and it may pay to use it if it brings the eggs, even when the hens are moulting. But, as he says near the close of his letter, "twenty to twenty-five pounds of meat per day for forty hens" looks rather loud to me, followed by all the bone they will eat later on.

Meat is comparatively cheap here, but I do not think we could afford to feed so much, as it would make eggs to costly. I do not wish to find fault with him but wish he had been more explicit.

Some allowance must be made for perhaps a hurried letter by Mr. Kinney, or for a lack of little details, as his letter was quite long. We have no doubt that the meat will answer as well when in the raw state or if cooked. We are satisfied that meat (and bone) is cheap because it makes the hen lay when nothing else will. We feed cut bone and meat raw. If we have cooked meat we use it, but whether cooked or raw the hens get it. We hope that Mr. Kinney will oblige Mr. Aldrich with more on the subject, as other readers are also interested.

BONES AND CLOVER.

We were under the supposition that we had many times before given the whole facts in regard to feeding bones and clover, but the the following letter from a subscriber in Boston calls for more on the subject. He writes:

"That was a very remarkable and valuable article which you published under the above heading in your June number, and it agreed with my experience in the economy of such feeding and its effectiveness. The article clearly and fully describes how to mix and feed the clover rations but does not fully state how much bone to feed, and how often, and whether to mix it with other foods. If you could supply this lack your readers would have complete knowledge on this most important subject.

Do you consider it necessary to supply any other grit when bone is fed, or any other green food when clover hay is fed, or any other meat when fresh bones are fed? Is there any element in the meat alone which is necessary? Is it necessary to feed charcoal, or pepper, or any condiment?

The POULTRY KEEPER gives away in each number so many concentrated truths, covering the whole field it treats of, that until the next number arrives it seems as if there could be nothing new to teach, but each number cures that belief.

In reply, we will state that one pound of cut meat and bone for sixteen hens (one ounce per hen) is considered sufficient daily. Bone may be fed alone, or mixed with other foods, but it is better to feed both meat and bone as a separate meal.

Bone serves both as grit and as food, and no grit is necessary when it is given. Clover is intended to supply the place of green food simply because green food is difficult to procure in winter, but if any other green food can be had it may be fed also. As *fresh* bones are rich in nitrogen, and nearly always have meat adhering to them, they will answer all the purposes of meat. As bones and meat are very nitrogenous, supplying the albumen for the eggs, they are almost a necessary adjunct to the daily ration. Such substances as charcoal, pepper, etc., are useless for healthy fowls.

We will take occasion to state that every reader should have the back number entitled "Feeding for Eggs." It contains eight columns on feeding, how to feed, the kinds of food, and also contains tables of much information. Any back number can be had for only five cents in stamps.

A TROUBLE WITH CHICKS.

A reader at Pinegrove, Pa., has a lot of chicks which droop and die, although he feeds them as much as they desire. The symptoms are best described by him, and we present his letter below for the benefit of others. He says:

I would kindly ask you for information in regards to my chicks dying from a strange disease, at any rate it is so to me. They thrive well until about three weeks old, and then they begin to droop their wings and their feathers become irregular. They get lighter in weight daily, and seem to waste away. Some get coated tongues, with a very bad smell, and they also get sore eyes, very like old hens with roup. When I lift them up there is no weight to them, their crops always appear empty and their heads are entirely bald, showing long pointed bills. Now please don't say lice, as I cannot say that they are entirely free from them, but I continually fight them, and know that I have a great deal less than others that succeed with their young ones.

I feed in the morning, to old and young, four parts bran and one part middlings, made up in a cold mash. Of this I give them about as much as they desire at one meal. At noon I give grass and vegetables, and have constantly before them cracked corn, in feeders, to which they have full access. The old hens can not get at the feeders. I keep the young ones in a yard with old hens. The yards are but one year old and are 12x100 feet.

The disease is probably roup. It has been caused probably by exposure at some time, and may be inherent, and it may be consumption of the bowels, or marasmus. It is difficult to state, as roup appears in many forms. An addition to the ration of a mess of linseed meal, added to the ground grain, would be an advantage. A tablespoonful of permangenate of potash in each gallon of water is the easiest mode of treatment, as any other method would entail laborious handling. We do not believe that the chicks will ever be entirely well again, and they should be destroyed.

DOES IT DESTROY THE PURITY.

Mr. F. Baltus, of Baltimore, writes us in regard to injuring a breed, or rather rendering a hen impure in blood, by mating her with a bird of some breed different from her own. Mr. Baltus explains the nature of his inquiry below. He writes:

In your "Bureau of Information," of the August number, in an answer to an inquiry to C. W., East St. Louis, Ills., you state that Brown Leghorn hens mated to a Black Minorca or Black Langshan cock, when afterwards mated back to a Brown Leghorn cock, would breed true again. Now I always have read in poultry literature, that hens of a pure breed, mated to a cock of another breed, would never breed true again. Is this not the case with Brown Leghorns or are they an exception? Will you please enlighten me, or possibly other readers of the POULTRY KEEPER, on this subject.

Would it be of any benefit to cross a Rose Comb Brown Leghorn on Barred Plymouth Rock or vice versa? Or would it be more advisable to keep the Brown Leghorn for eggs and the Plymouth Rocks for market chickens. I have both breeds.

As there is no arterial circulation of blood between the hen and her offspring, it being hatched *outside* of the body, and grows from food *deposited* for that purpose, we cannot conceive of any injury to the hen by strange mating. In the case of animals, the dam and her young are more intimately connected, yet it is rare—very rare—for them to be affected. We have changed males with hundreds of hens, and never yet saw any injurious effects therefrom, although we are aware that some have affirmed just the reverse.

We cannot see any advantage in crossing the two breeds, as the good qualities of both will be destroyed, and the cross will not equal either of the parent breeds.

CROSSING FOR TOO MUCH.

Mr. J. H. York, Dallas, Texas, wishes to cross two breeds, and at once secure an "all round fowl," which is a consummation ardently desired by hundreds of others. In writing us Mr. Y. says:

"I have two young cockerels, one a Brown Leghorn and one a Black Minorca. Will you please inform me which would be two of the best breeds of hens to cross them with for all round fowls, for table use, and for egg producers in a city lot, with a very good range."

Perhaps it would be just as well to use them with a flock of common hens, as there would be some improvement made by the use of the males. The breeds mentioned belong to two families of active foragers, the hens being non-sitters. "All round fowls," that is table fowls and egg producers, cannot be derived from any mode of crossing with them, but they should produce offsprings the pullets of which would no doubt prove excellent layers.

ROSE-COMB BLACK MINORCAS.

In regard to the controversy about the above breed of fowls, between Mr. G. H. Northup, Raceville, N. Y., and Mr. Theo. Campbell, Lexington, Ky., Mr. Northup sent us an able article, containing copy in full of Mr. Campbell's letter to him and Mr. Northup's answer to the same, which is convincing to us that Mr. Northup considers he has good reasons for his article in a former issue of the POULTRY KEEPER, and that he does not believe he did Mr. Campbell an *injustice* in quoting a portion of his letter, as it was not of a confidential nature, and that the part quoted did not mislead the reader. We believe Mr. Northup is above defaming anyone for a selfish object. Our only reason for omitting Mr. Northup's article from the September issue was to end the controversy.

ARTIFCIAL INCUBATION IN CHINA.

We recently saw, in the correspondence of a traveler who was sojourning in China an account of a professional "egg hatcher" of that country, which was quite novel. This operator hatched out ducks' eggs in great quantities in baskets heated artificially for the purpose; and, in his way, he was very successful. It is said there are numbers of these egg hatchers to be met with in the interior, near Chinese large cities or commercial ports, and that they do a thriving trade in their vocation in the early season of the year.

In the instance referred to the writer describes the heathen operator as one of the greatest "lions" in *Chusan* where he saw him. He is an old Chinaman who every spring hatches thousands of duck eggs by artificial heat. He received me, says this traveler, with Chinese politeness and offered me tea and his pipe, two things always at hand in a Chinese house, and perfectly indispensable. I asked permission to examine his hatching-house—to which he immediately led the way.

The Chinese cottages, generally, are wretched buildings of mud and stone, with damp earthen floors, scarcely fit for cattle to sleep on and remind one of what Scottish cottages were some years ago, but which now, happily, are among the things that were. The Chinaman's cottage was no exception to the general rule. Bad-fitting, loose, creaking doors; paper windows, dirty and torn, ducks, geese, fowls, dogs and pigs in the house and at the doors, apparently having equal rights with their masters.

The hatching-house was built at the end of the cottage and was a kind of long shed, with mud walls and thickly thatched with straw. Along the ends, and down one side of the building are a number of round straw baskets, well plastered with mud, to prevent them from taking fire. In the bottom of each basket there was a tile placed, or rather the tile forms the bottom of the basket. Upon this the fire acts—a small fire place being below each basket. Upon the top of each basket there is a straw cover, which fits closely, and which is kept shut while the hatching process is going on. In the centre of the shed are a number of large shelves placed one above the other, upon which the eggs are laid at a certain stage of the process. When the eggs are brought, they are put into the baskets, the fire is lighted below them, and a uniform heat kept up, ranging, as nearly as I could ascertain by some observations which I made with the thermometer, from ninety-five to 102 degrees. But the Chinamen regulate the heat by their own feelings, and therefore it will, of course, vary considerably.

In four or five days after the eggs have been subject to this temperature, they are taken carefully out, one by one, to a door in which a number of holes have been bored, nearly the size of the eggs; they are then held against these holes, and the Chinamen look through them, and are able to tell whether they are good or not. If good, they are taken back and replaced in their former quarters; if bad, they are of course excluded. In nine or ten days after this—that is, about fourteen days from the commencement, the eggs are taken from the basket, and spread out on the shelves. Here no fire heat is applied, but they are covered over with cotton, and a kind of blanket, under which they remain about fourteen days or more—when the young ducks burst their shells, and the shed teems with life. These shelves are large and capable of holding many thousands of eggs; and when the hatching takes place, the sight is not a little curious.

The natives who rear the young ducks in the surrounding country know exactly the day when they will be ready for removal; and in two days after the shell is burst, the whole of the little creatures are sold and conveyed to their new quarters, where—with the natural heat of that hot climate, and proper attention to their needs—the ducks are subsequently raised to advantage, and are sold when a third or half-grown, for the tables of the mandarins or the foreign resident merchants.

This may answer in China. But such a method (even if any of us understood it, which we do not) is quite impracticable on this side of the water.—*Burnham's Raising Fowls and Eggs for Market.*

EGGS.

The *Scientific Farmer* says: "The nutritive value of eggs, and the cheapness of their production, is scarcely realized by the public. It may seem rather improbable to state that when meat is twenty-five cents a pound, the food value of eggs is about thirty-seven and a half cents a dozen, yet this seems to be the fact. A hen may be calculated to consume one bushel of corn yearly, and to lay twelve dozen or eighteen pounds of eggs. This is equivalent to saying that three and one-tenth pounds of corn will produce, when fed to this hen, one pound of eggs. A pound of pork, on the contrary, requires about five and one-third pounds of corn for its production. When eggs are twenty-four cents a dozen, and pork is ten cents a pound, we have the bushel of corn fed producing two dollars and eighty cents worth of eggs, and but one dollar and five cents worth of pork. Judging from these facts, eggs must be economical in their production and in their eating, and especially fitted for the laboring man in replacing meat."

The Largest and Handsomest Railroad Terminal in the World. The Pennsylvania Railroad's Station in Philudelphia.

When the Pennsylvania Railroad Company completed its magnificent station in Jersey City, it was conceded by railroad experts that, even with the rapid advance of modern times, it would be fully half a score of years before a terminal station would be constructed with the idea of rivaling the facilities afforded the traveling public in New York and Jersey City.

But the demand of the public in this age is for great and seemingly impossible things, and in meeting these public demands no corporation on the globe can compare or compete with the progressive spirit and practical results shown by the Pennsylvania Railroad Company.

This is opportunely illustrated in Philadelphia to-day, where ground has already been broken, and the busy hum of an army of mechanics may be heard, while work is being pushed on what will be the largest and handsomest railroad terminal in the world, the Pennsylvania Railroad's New Broad Street Station.

THE NEW STATION BUILDING.

After numerous plans from various well-known architects had been submitted, and carefully considered, the officials of the road finally selected the plans of Furness, Evans & Co., of Philadelphia.

Unusual interest has already been taken in this structure, which must reflect great credit on Philadelphia as a city, and frequent have been the requests for information regarding the details of its construction. Treating the great station and its completion independent of the train-shed, which is a marvel in itself, one is staggered with the importance of the undertaking, directly in the face and ever-active pulsations of the volume of shipping and travel to and from Broad Street Station. It seems perfectly safe in prophesying that not a detention will occur, however, when the work in New York and Jersey City is taken as a precedent, for there, during the entire construction of the great shed, adjoining buildings, and miles of new road-bed not so much as a single wheel was clogged nor a detention caused in travel. This character of work goes far to convince one of the efficiency and supremacy of a system universally recognized the best—that of the Pennsylvania Railroad. And under this system the new work in Philadelphia will be operated. This structure has been designed to be a mammoth ten-story building of modern Gothic architecture, whose exterior will be finished to correspond with the present station, as its construction will be of granite and brick, with the highly ornamental trimmings and bas-reliefs in terra-cotta. Necessary modifications will be introduced in the lines of the new station, so as to obviate any dwarfing of the present building, even though the height of the main tower will be 240 feet, and also to better create a uniform harmonious whole after its completion, when it will stand the most imposing railroad terminal station and shed in the world.

It will extend to Market street, occupying all of the ground south of the present station between Market street and the present station, extending west on Market street over Fifteenth street and sixty feet beyond. This immense building site will afford an extensive increase in the practical operating area and create greater space accommodations for the traveling public. Reducing the territory occupied by the new station and shed to simple figures, it is shown that four and three-fourths acres of ground are to be under roofing.

THE LOWER FLOOR.

The main entrance for outgoing passengers will be at the corner of Broad and Market streets, and will be semi-circular and imposing in design, another entrance will be on Filbert street, west of Broad, and a score or more of great arched entrances will line the front of the building on Broad street.

All of these entrances will be protected by a glass-covered arcade or awning, extending the entire length, and covering the pavements on the Broad and Market streets facades, which in inclement weather will form ample shelter for outgoing or incoming passengers.

The plan for the lower floor, which has been designed with the greatest study and care, promises to afford the greatest possible convenience to the public. The entrance hall on the ground floor will extend from Market street to the baggage-room on Filbert street, affording commodious accommodations for incoming passengers and avoiding any possibility of a crowd or rush about the ticket-windows, the elevators, or stairways, and is so designed that the mass of arriving and departing passengers will be entirely separated. The Broad street side will be virtually thrown open with entrances, and the adjustment of the ticket-offices and the exceptional facilities for comfort and rapidity when tickets are to be bought could not be improved upon. The ticket-office will be in the middle of the building, situated about where the large exit now is. The main stairway will be immediately back of the range of ticket-windows.

The main stairway will consist of two broad flights, one starting from Market street and the other from the Filbert street side. These flights will ascend to a common landing, and from this there will be one grand stairway entering in the centre of the second or main floor of the station.

On either side of the main flight are two large elevators running between the first floor or entrance hall and the second floor waiting-rooms and train entrances. These elevators will also communicate directly with the cabs and carriages on Fifteenth street,

CAB AND CARRIAGE FACILITIES.

In view of the fact that the Pennsylvania Railroad Company was the pioneer of the present splendid railroad cab, carriage and hansom service, it is not a surprise to find the space that will be devoted to cabs in the plans of the new structure, and to see the improved conveniences for the public through this medium.

Near the Filbert street side, on Broad street, there will be a large *port-cochere* for carriages bringing passengers to the station, while opening from it there will be a greatly enlarged baggage-room. Thus the arriving passengers having baggage with them to check will be able to purchase their tickets, check their luggage, and ascend by the stairways or elevators to the train floor without having to retrace their steps, and at the same time they will avoid confusion by coming in contact with the departing traveler. The stand for cabs will be on the Fifteenth street side, where it will be easy of access by outgoing passengers, and when completed it will occupy about half of the length of the building, making it about twice the present space devoted to this service.

THE SECOND FLOOR OF THE NEW STATION

Entering the main floor from the grand staircase there will be presented on extensive scale a modern mammoth interior, equipped with general waiting-rooms of every description.

The passengers' reception or waiting-room will be extended out to where the line of iron fence is to-day, and the lobby will be 50 feet wide instead of 30 feet, as it is at present. The grand stairway will open directly in the centre of a main waiting room 82 feet wide by 136 feet in length. Arranged on this floor will be the dining-room, 29 feet wide by 111 feet in length. This will extend along the Broad street front, while adjoining it will be a restaurant 32 feet wide by 82 feet in length. Independent of the main waiting-room there will be a women's waiting room 56 feet by 82 feet, and a very large room for men. There will be also Pullman and telegraph offices, barber-shops, retiring-rooms, and news-stands. In its interior arrangement, designs, and ornamentation it will embody everything of utility, combined with accessories to please the eye.

THE OFFICE BUILDING.

The main entrance to the office building will be on the Market Street facade, midway between Fifteenth and Broad Streets. Leading from this dignified entrance will be the stair-cases and three elevators for the exclusive use of the business public and the officers.

There will be another entrance to the office building proper at the corner of Fifteenth and Filbert, for the use of the army of clerks and employees.

Definite plans for the interior divisions of the upper floors have not as yet been outlined, but it is estimated there will be about two hundred various offices and clerks who are now in the general offices so as to accommodate all the officials at Fourth and Walnut streets. In completing the plans an ample margin has been left in office room for the enormous yearly increase of officials and employees. To this end the new part of the building will be ten stories high, or eight stories above the main waiting-room on the second floor.

THE KITCHENS.

This important institution will be on the floor over the station dining-rooms and luncheon tables, and will be replete with every modern convenience.

The accommodations and paraphernalia for the French *chefs* and their corps of assistants would make the modern housewife's eyes gaze in wonder and admiration. All the heats and odors are to be carried off by a system of ventilation.

An entrance and elevator at Fifteenth and Filbert have been designed for servants, and all necessary supplies for the dining-rooms and kitchens will find their entrance and exit there.

EVEN LOOKING TO THE FUTURE.

The design of this immense building, as a whole, is also susceptible, should the requirements of the road demand an increased space, of being extended over the present station to a ten-story structure corresponding with the new station as it will appear when erected, thus doubling the capacity of the work now in contemplation and still preserving a harmonious architectural effect.

THE MAMMOTH TRAIN-SHED.

This great iron and glass portal to Philadelphia will be the largest railroad train-shed in the world, not accepting anything of like construction in this country, or the Midland, the St. Pancras, or the London, Chatham and Dover in London. It will cover an area of 707 feet long, 307 feet wide, and 140 feet in height from the platform to the ridge of the central ventilator. The main arches will have a clear span of 294 feet at track level, and a clear height at the centre of 104½ feet above the top of the rail. The entire structure, with its 6,000,000 pounds of iron, will present the appearance of a gigantic sun-parlor, for its extensive roof is to be largely composed of heavy translucent glass in iron frames. The glass in the roof alone will cover an area of one and three-quarter acres. Although the mammoth arches span an extreme width which measures 307 feet without any intervening obstructions or supports, leaving the space clear for 16 tracks and the necessary platforms, the whole construction will be a model of strength, notwithstanding the unsuggestive lightness of the iron trusses and purlins.

The exteriors of the train hall, both on Market and Filbert Streets, have been designed to accord perfectly with the style of architecture used in the station building, thus obviating the usual abrupt incongruity so often seen between station building and the train halls, thus making the entire exterior one consistent design.

The height of the roof, the extensive surface of glass used in the covering, will render the sheds as light as day, and rob it of that dinginess so often noticeable in such structures, while excellent ventilation, also attributable to its altitude, will serve to keep the air free of smoke.

JUST WHAT WE ARE TRYING.

Just what we are trying to learn and do is the subject of an inquiry by a gentleman at Winona, Minn., who asks us as follows:

"Are Silver-laced Wyandottes a good breed, and what is the best food to make them lay in winter."

That the Silver Wyandottes are a good breed is a fact well established, but just what is the best food to make them lay in winter is a subject for discussion. We believe bones, meat, grain, and clover, to be the best, but then the hens may be too fat, or they may have been late in moulting. The best way to make them lay is to give them a warm poultry house, feed a variety, and keep them busily at work scratching.

POULTRY HOUSES.

Before purchasing fowls, make your poultry house all ready to receive them, or you may do your stock more harm in a few days by close cooping them, or cold roosting them, than you can repair in a year. I design showing here how very readily, and at how small a cost, a sufficiently good, and in every respect suitable poultry house may be erected. I can not, of course, desire to recommend any restrictious to those whom Providence has favored with wealth. There exists no reasonable objection to such as can afford it gratifying their taste, either as to extent of accommodation, or elegance of structure. The poor man, on the other hand, need not lay out one penny, and still may be as successful in his operations as his more wealthy neighbor. It is my object to write for all classes. I shall, accordingly, describe several sorts of poultry houses, from that on the most perfect and extended scale, to that which can only boast of barely answering the purposes for which it is designed. In nine cases out of ten some out-house is appropriated to the purpose, without preparation or alteration. But, if consistent with your means, by all means build a proper house. Choose a piece of gravelly soil, well drained, on a slight declivity, near trees which will afford shade and shelter from winds. The building should be lofty enough to admit the poultry keeper without stooping, because if it be inconvenient to enter, the chances are that regular cleaning will be neglected. Let the roof be kept weather tight. If slates or tiles are employed, the house should be ceiled in order to protect the fowls from draughts and rapid variations of temperature; in default of lath and plaster, a piece of asphalted felt closely nailed makes a cheap and efficient ceiling.

The best perch is made in the shape of a broad, double ladder, stretched out so as to form a wide angle; the bars being placed so far apart that one fowl shall not overhang another. If roosting bars be used across the fowl house, care should be taken that a convenient hen ladder is always attached to them, and that they are not placed too high. Heavy fowls are apt to break their breast bones in trying to fly down from high perches.

The careful poultry keeper should take a view of the fowls at night, after they have gone to roost, and see that they are all comfortable, not too crowded, with room enough for the weak ones to get away from the strong, who are apt to tyrannize. The floor must be dry and covered with fine gravel or sand, and it should be swept clean every day. Nothing injures the health of fowls more than bad smells. To obviate this always keep a basket of slacked lime or old mortar in a corner with a shovel, so that you may shake some dirt over it. The sweepings, if kept quite dry, form most valuable manure. For the same reason have the interior walls frequently whitewashed and the window open in fine weather. If the window can be filled with a venetian blind so much the better. The door should have a hole at the bottom, with a sliding panel to admit the poultry during the day—by keeping it locked you have a better chance of gathering plenty of eggs. If you have no windows, movable loose boards fitted to the door may be useful to admit air.—*Domestic Fowls, Richardson.*

LETTUCE FOR POULTRY.

Let me say to those of your subscribers that are raising poultry if they want early lettuce, let them make a rich bed about the first of September and sow the seed, keep the soil moist, (not too wet) and by the time the first good rain comes your plants will be large enough to transplant. Great care should be taken not to have the plants too thick in the seed bed, if so, they soon become spindling and weak, and are almost entirely worthless. I have had the *best* of success in transplanting them when quite small into another larger bed, and then when the plants are strong and stocky, transplant them into the garden. In this way I have raised heads that would weigh over five pounds. In order to have the best of success with lettuce you must have very rich soil, plenty of moisture and grow it during the cool months of the year. It flourishes best here in February, March and April. I consider lettuce a very valuable feed especially for young chicks and a vast amount of it can be raised on a small piece of ground.—*Ira W. Adams, in Sonoma Farmer.*

LEG WEAKNESS.

There are many causes for leg weakness. When young cockerels fall on their knees, eat well and seem to have no other ailment, it is due to heavy feeding and they will recover. Jumping from a high roost, especially if the birds are fat, will cause the difficulty, and too much sulphur in the food in damp weather will cause rheumatism. If some of the hens droop, cannot stand on their legs and gradually become worse, they should be removed from the male without delay and kept away from him until they recover. Damp quarters will cause leg weakness in fowls, and especially with ducks and geese. Sore feet are caused by frosting during severely cold weather, and also by the birds jumping daily on hard substances when leaving the roosts. When young chicks have leg weakness, it is due usually to lack of warmth and the rapid production of feathers.

DESERTED EGGS HATCHING.

A writer in the *Scientific American*, having stated that eggs will hatch after being four hours cold—during incubation—another claims that a greater time will not destroy the life of the ovum, and says that he had a hen which left her nest for two days and nights, after sitting within two or three days of the time of hatching, and the eggs being perfectly cold, out of curiosity he determined to try the experiment. He removed them to a garret room, which was very hot, the thermometer in the coldest part of the house being at the time ninety-five degrees Fahrenheit. On the third day from the time the eggs were left by the hen, they hatched by themselves and the chickens are now running about his yard quite strong and hearty.

HALF RATE EXCURSIONS TO THE WORLD'S FAIR VIA WASHINGTON AND THE B. & O. R. R.—The Baltimore & Ohio R. R. will run a series of special excursions from Philadelphia to the World's Fair at rate of $17.00 for the round trip. The trains will consist of first-class Day Coaches, equipped with lavatories and toilet conveniences. The trains will start from station 24th and Chestnut streets, Philadelphia, at 11:00 a. m., September 20th, 26th and 30th, October 5th, 9th, 18th and 25th, and will reach Chicago at 4:30 p. m. the following day. Tickets will be valid for outward journey only on the special trains, but will be good returning from Chicago in Day Coaches on any regular train within ten days, including day of sale. Stops will be made for meals at the dining stations on the line A Tourist Agent and a Train Porter will accompany each train to look after the comfort of passengers. For more detailed information as to rates, etc., apply to James Potter, District Passenger Agent, 833 Chestnut street, Philadelphia, Pa.

L. Brahmas, choice stock. 19 hens and 1 cock for $45. A. N. Doane, Gainesville, Wyo. Co., N. Y.

Black Minorcas. Twenty selected cockerels, at $1.50 each. O. K. PINNEY, Calkins, Pa.

For Sale.—S. C. B. Leghorn Cockerels. H. N. REED, Newark, Delaware.

Wanted.—Experienced poultryman. Terms and ref's. W. Lemmon, Cementville, Clark Co., Ind.

WANTED.—A position on a Poultry Farm. WARNE SMITH, Sunny Side, N. J.

Choice Cockerels for Sale. S. C. W. Leghorn and B. P. Rock. J. R. G. Allison, Spring Mills, Pa.

Wanted at once.—Buff Leghorns, Ind. Games, Buff P. Rocks, Buff Wyandottes, Minorcas. Address Box 32, Washington, N. J.

F. R. MINNER, Bechtelsville, Berks Co., Pa., has for sale cheap (if taken at once) Buff Leg., S. S. Hamburgs and Indian Games.

4 Dollars a Trio. Leghorns, White and Brown, R. and S. C. Forsyth and Tyler strains. Cir. H. B. PINNEY, Calkins, Pa.

For Sale.—1000 nice yearling hens, 60 cents each. Drinking Fountains, Nest eggs, J. C. lowest prices. C. E. L. HAYWARD, Hancock, N. H.

A few B. P. Rock Cockerels for sale. Stock first class and prices reasonable. Address J. T. FRENCH, 838 Urbanna St., Toledo, Ohio.

300 fine S. C. B. Leghorns and B. P. Rocks. Cockerels and pullets for sale. Circulars free. S. K. MOHR, Hilltown, Pa.

A. RISLEY MULLER, Praxton, N. Y. B. and W. P. Rock, W. Wyandottes and Red Cap cockerels. Very fine. Write for wants.

Brown Leghorns. Choice exhibition cockerels. $3.00 breeders, $1.50; noted strain since 1876. A. C. NELLIS, Stapleton, N. Y.

R. C. W. and S. C. W. Leghorns, extra large size and bred for egg production. F. P. HATCH, Dryden, N. Y., Tompk. Co.

FOR SALE.—Cornish Indian Games, Barred Plymouth Rocks and Mammoth Bronze Turkeys. J. H. HELMS, Centreville, Ind.

BIG LAYERS. Rose Comb White Leghorns. L. N. LIGHTY, East Berlin, Pa.

B. Langshans, B. P. Rocks and B. Minorcas. Choice birds for sale. Eggs in season J. W. ECKERSON, Rivervale, N. J.

BUFF WYANDOTTES FOWLS, PLYMOUTH ROCKS. Bargains. Write J. D. WILSON, Worcester, N. Y.

100 Rabbits, Belgain Hares, Guinea Pigs, Partridge Cochins, Wyandottes, and Golden Seabright Bantams. A. B. Wingert, North Hampton, O.

BONE MEAL FOR POULTRY. Crushed Oyster shells, Flint and Beef Scraps. Send for new price list. YORK CHEMICAL WORKS, York, Pa.

For Sale.—Fowls and Chicks, 6 varieties. Incubatoreggs. Stamp. J. P. Hellings, Dover, Del.

THE great Inter-State Fair, at Elmira, N. Y., this month, (Sept.) awarded Webster & Hannum 1st over all competitors Bone Cutters.

40 acre Fruit and Poultry Farm for sale. Six roomed house, barn, four incubators, hot water brooder, 2,000 capacity, and eight fowl houses. Price, $2,200. Address, Susan Reed, Hammonton, N. J.

Leghorns and Beagles. R. C. W. and Brown and S. C. Brown and Buff Leghorns and S. S. Hamburgs. 6 Beagles, 5 mos., from Reg. stock, for sale. H. J. BROWN, Harford, Cort Co., N. Y.

ST. BERNARD PUPS; a fine litter by celebrated Casper (Ch. Plinlimmon—Effie), out of registered bitch. Intelligent companions for children. R. M. GARD, Frankford, Ind.

Webster & Hannum. Have given cutter a fair trial, it does the work grandly. AUG. D. ARNOLD, Dillsburg, Pa.

NEW BLOOD! You will be left if you put it off till spring, to buy a W. F. B. SPANISH COCKEREL. Price and my photo free. JOHN BENNETT, Sunman, Ripley Co., Ind.

"DIRT CHEAP." Bar. Ply. Rocks, Black Minorcas, W. Wyans., Part. Cochins, Lt. Brahmas, Buff Leghorns, White Wonders, Ind Games. PENINSULAR POULTRY YARDS, St. Ignace, Mich.

If you are in want of Hen-Cocks of different colors, bred for fighting purpose, which are unsurpassed for gameness, and which are guaranteed exactly as represented. Write. Circulars. C. A. LAMB, Grand Rapids, Mich.

CLEAR GRIT FOR POULTRY. Send Stamp for Sample. D. Lincoln Orr, Supt. ORR'S MILLS POULTRY YARDS, ORR'S MILLS, N. Y.

PARTNER WANTED.—A young man 25, having control of a 40 acre farm, well situated, seeks partner to work the place with him, as a business, raising poultry. One having a widowed mother to keep house for both preferred. Address Bernardsville, care of THE POULTRY KEEPER PARKESBURG, PA.

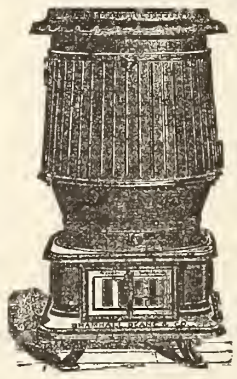
$184 MADE FROM 31 HENS last year by using good nests. All about it for stamp. F. GRUNDY, Morrisonville, Ill.

ST. BERNARDS AT STUD. Ch. Scottish Leader, fee $10; Eboracum, fee $40; King Regent, fee $35. COCKER SPANIELS AT STUD. Middy, $25; Jack of Clubs $20; Duke Oban, $15; Cherry Punch, $15. Illustrated catalogue free. SWISS MOUNTAIN KENNELS, Germantown, Philadelphia, Pa.

BOOM THE LEADERS!

The two best poultry papers on earth are FARM POULTRY..... 50 cts. and POULTRY KEEPER..... 50 cts. We will send both, for one year, for only 70 cts. I. S. JOHNSON & CO., Boston, Mass.

BONE CUTTER FREE! To any one proving that we ever lost a premium on our Bone Cutters, when in competition for premiums will be presented with one of our $30 Power Cutters free, Rochester and New York included in this. Send to us for the truth of this much talked about premium, and see what the Secretary says. We don't have to misrepresent to sell our machines. WEBSTER & HANNUM, Cazenovia, N. Y.



BROODER HEATERS The only successful Heater made. Used by all poultry raisers. Send for Circular BRAMHALL DEANE & CO., 264 Water St., N. Y. 83 Market St., Chicago.

Chicken Cholera. A bird which becomes a prey to cholera is nerveless, staggers and carries its wings drooped, its feathers are ruffled, head drawn in, drowsy, has no desire for food, drinks a great deal; seeks some covert away from other fowls; constantly shutting and opening its eyes, accompanied by a tremor; a film covers the corners of the eyes with water; face, comb and wattles turn purple; evacuations thin and yellowish in color, a later a mixture like sulphur and milk, with green, of a frothy appearance. In order to effect a cure of Chicken Cholera we must have: 1. Something that is antagonistic to the microscopic forms of animal life and, at the same time, an antiseptic. 2. Something to stimulate the liver. 3. Something to stimulate the heart. 4. Something to correct the stomach and is also a stimulant. 5. Something that is mucilaginous and therefore mechanically soothing to the intestines, which are very much irritated in this complaint, as evidenced by the flux from the bowels. All these healing qualities are contained in the Microcide Chicken Cholera Cure and Preventive. I have never known a case of chicken cholera that it failed to cure. If your hens do not lay, a few doses will bring them around. The Microcide Chicken Cholera Cure and Preventive is put up in half pound packages and retails for 25c. If you cannot find it on sale in your town send 25c. to manufacturer and he will mail it to you. Manufactured by W. R. MESEROLE, Springville, Susq'a. County, Pa.

Excelsior Poultry Farm. 25 STANDARD BREEDS 25 Send stamp for Catalogue. F. S. STAHL, Manager, Quincy, Ill.

HATCH CHICKENS BY STEAM With the Improved Excelsior Incubator. Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class Hatcher made. Circulars free. Send 6c. for Illus. Catalogue. GEO. H. STAHL, Quincy, Ill.

INCUBATOR ON TRIAL NOT A CENT UNTIL AFTER YOU HAVE TRIED IT STAMP FOR CATALOGUE BOOK INCUBATION 5 CTS SET PLANS BROODER HOUSES &c 25 CENTS VON CULIN INC. CO DELAWARE CITY, DEL

ONLY $1.10! CANNOT BE EQUALED!
FARM POULTRY (Monthly)..... 50cts
POULTRY KEEPER (Monthly)..... 50 "
FARM and FIRESIDE (Semi-Monthly) 50 "
MODERN COOK BOOK..... 50 "
Total..... $2.00
All sent postpaid on receipt by us of cash or stamps, $1.10. Sample papers free. Address FARM POULTRY, Box F. P. BOSTON, MASS.

JUNIOR The best and most reliable Incubator made. Illust'd catalogue 6 cents. Pamphlet free St. Louis Hatcher Mfg. Co., St. Louis, Mo.

"Everything For The Poultry Yard." Poultry and Supplies. MOST COMPLETE STOCK IN AMERICA. PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere. Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS. Do You Want Our Catalogue? 60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER. MICHIGAN POULTRY FARM, Geo. J. Nissly, Prop. SALINE, MICH.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy, Boericke & Tafel, 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. Oldest Homœopathic Pharmacy. Established in 1835. *The Poultry Doctor*, 85 pp., 12mo, cloth, 50 cents.

"LIKE WILL BEGET LIKE." 700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by "Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas," the grandest specimens of these varieties owned in America to-day. At New York, Feb. '90, won 4 grand Gold Specials, 8 firsts and 9 seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

We are So Anxious That you should see our new circular on Poultry Supplies. It illustrates the most complete line ever offered. FREE Johnson & Stokes, —SEEDSMEN— 217 & 219 Market St., Phila., Pa.

HOW TO RAISE TURKEYS!

The numerous diseases that are usually prevalent among very Young Turkeys, may be prevented by the use of CARY'S PILLS. Send for Circular. E. FOUGERA & CO., 30 North William Street, New York.

Webster & Hannum. Cutter works like a top. J. E. PENKIN'S, West Stoughton, Mass.

S. S. Hamburgs and S C. B. Leghorns. Superior young stock; prices low. A. L. Cary, Lewis, O.

Ind. Games, stock of Superb Chicks for sale, at living prices. **A. J. MOWRY, Milan, O.**

Webster & Hannum. Cutter is all you say it is. **C. T. GOODALE, Meadville, Mo.**

White and Bl. Langs., Buffand Wh. Cochins, Ba. P. R'k. Stock and eggs. S. L. Farrar, Bath, Me.

Webster & Hannum. Am very much pleased with it. Frank Leeke, Mascontah, Ill.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

WEBSTER & HANNUM. Cutter works boss. **J. R. URICH, Mendon, Ill.**

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

DR. JOHN W. KING. Kent, Conn., breeds the **best** W. Leghorns, L. Brahmas and W. P. Rocks.

EGGS from prize winning B. Turkeys. Jos. W. Fleming, Buckingham, Ill. Stock after Sept.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

Jumbo I. Games. Frayne, Champion and Agitator strains. Cir. P. O. Hopkins, Hammansburg, O.

White Fowls. Stock for sale, cheap. W. Polish, W. Cochins, W. Leghorns, bred from prize winners Cir. free. Geo. A. Friedrichs, Erie, Pa.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

Prize winning S. and W. Wyans., I. Game and P. Ducks. Stock and eggs for sale, send for Cir. **M. H. LEIDY, Blooming Glen, Pa.**

Webster & Hannum. Other cutters standing idle, using yours in preference. F. W. Gaylor, Saratoga Springs, N. Y.

Webster & Hannum. Cutter works fine, does the work perfectly, all praise it. J. O. Depand, Blue Springs, Neb.

PIT GAMES ONLY, ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

BEATTY'S PIANOS and **ORGANS** $33 up. Want agt. Cat'lg. **free.** Address DANIEL F. BEATTY, Washington, N. J.

Low Prices.—Eggs in small or large quantities, also stock. S. C. W. Legs and W. Wyans., Knapp St., cross b'ds for br'ls. B. H. Noxon, Elm St, Ithaca, N. Y

Buff Legs., Bu P. Rks., I. Gms., Bl. Mins., P. Rks. P. D'ks. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

W. G. MYER, Madison, Wis. Lt. Brahmas; B. P. Rocks; B. Langshans; P. Cochins, Young stock. Write for prices and description.

Webster & Hannum. Amount cut by power 2,33 pounds green bones with your No. 1 cutter. Best in good order T. E. Stanton, Manlius, N. Y.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks, choice Cockerels $2 to $3 each. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

Webster & Hannum. Cutter gives perfect satisfaction as to good and fast work and light running. A. E. BLEAM, Milford Square, Pa.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. **D. M POLING, Van Wert, Ohio.**

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

Webster & Hannum. Cutter works first class. Any one doing business with Webster & Hannum will find them up to their word. **E. W. BROWN, Jr., Old Mystic, Conn.**

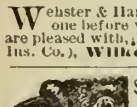
The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass.**

White and Black Minorcas, winners of highest awards at all important Shows in U. S. and Canada. Stock, Exhibition birds. Eggs $3 per 13, $5 per 26. Thomas A. Duff, Toronto, Canada.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pilgrimmon strains. P. H. Jacobs, Hammonton, N. J.

W. & B. MINORCAS. Fine exhibition birds and first-class breeding stock for sale at all times. Eggs in season. Stamp for reply. WM. J. SCHAUBLE, Erie, Pa.

Webster & Hannum. Very sorry I did not have one before works very easy and perfectly, all are pleased with it. **J. S. FRENCH** (N. Y. Life Ins. Co.), **Wilkes Barre, Pa.**



Sweepstakes at Chicago, 1891

B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. **F. M. MUNGER, DeKalb, Ill.**

Spratts Patent

Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York. N. Y

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in sea. Cir. W. A. Williams, Rome City, Ind.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

Northup's Black Minorcas. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. **CHARLES RIVER POULTRY YARDS,** Newton Lower Falls, Mass.

BIG BARGAINS! In order to make room for our growing chicks we will sell for less than half their value 100 P. Rocks, 50 Lt Brahmas and 25 Mammoth Bronze Turkeys. J. F. Barbee, Millersburg, Ky.

Webster & Hannum. I wish to state Bone Cutter meets the requirements satisfactorily runs easily and does good execution. J. Y. Bicknell, Buffalo, N. Y.

LIGHT BRAHMAS.

Heavy winners at Bloomington, Ill., Dec. 1892, and Indianapolis, Ind., Jan. 1893. Stock for sale. **ALFRED DOYLE, Morgan Park, Ill.**

HOWELL'S LEGHORNS.

400 White and Brown Youngsters ready for fall and winter shows and next year's breeding. **C. E. HOWELL, Elmira, N. Y.**

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. **G. W. PRESSEY, Hammonton, N. J.**

Now is the time to order your Sheep and Beagle Dogs I have some extra fine **Hampshiredown** Ewe and Buck Lambs for sale. Also Poland China Pigs and broken Beagle Dogs, variety of Poultry. Stamp for Cir. A. Elwyn Strode, West Chester, Pa

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE **WM. H WIGMORE, 107 S. Eighth Street, Phila., Pa.**

350 BARRED PLYMOUTH ROCKS Trio, $3.00, $3.50 to $4 00 for best breeders. Best cockerels, $1.50. **A. O. ROBERTS, Atlantic, Iowa.**

BUY THE BEST. The Improved Monitor Incubator. Hundreds of Testimonials **from all parts of the world** as to its merits over all other makes. Large book with cuts for stamp. Address **A. F. Williams,** Bristol, Conn.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.90, postpaid. They make handsome and valuable books. Address **Poultry Keeper Co.,** Parkesburg, Pa

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. R. Brabazon, Delavin, Wis

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (E Wilson's Patent). 100 per cent. more made in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS.** Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa.

MAPLE FARM DUCK YARDS.

The Largest Duck Farm in America

Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices **JAMES RANKIN, South Easton, Mass.**

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

HAWKINS

breeds America's best **PLYMOUTH ROCKS, Barred and White. WYANDOTTES, Silver and White.** More prizes awarded this strain than all others combined. Selected Breeding Birds that will produce winners. Finely illustrated catalogue of America's greatest poultry farm, free. Lock Box 4. **A. C. HAWKINS,** Lancaster, Mass.

CHOICE STOCK FOR SALE

after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH, Utica, N. Y.**

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes,** Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.,** by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

THE BEST POULTRY FENCES,

Galvanized Wire Nettings,

ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.10 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.

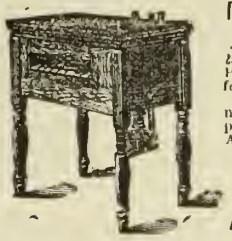
PETER DURYEE & CO., 215 Greenwich St., N. Y.

SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet with Coating, Caps and Nails. Sample and circular free.

A. F. SWAN, 38 Dey St., N. Y.

OUR CATALOGUE FREE. **POULTRY SUPPLIES** HARVEY SEED CO. BUFFALO, N.Y.



The Prairie State Incubator

takes the **Three First Premiums** at the Great New York Show, Madison Square Garden, February 28th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $25.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.

Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.

ALL MACHINES WARRANTED.

PRAIRIE STATE INCUBATOR COMPANY,

Homer City, - - - Penna

How To Make Money WITH A FEW HENS

Is the Teaching of

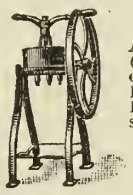
FARM-POULTRY.

A Live, Practical Poultry Raising Guide.

It is acknowledged to be "The Best Poultry Magazine Published" in the world.

Send for **Index** to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions** can begin with any back number you desire.

Are you **keeping Poultry** for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "**What has been done, can be done again.**" **Remember** the price; 50 cts. one year; six months 25 cts; sample free. **Remit** cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**



MANN'S CELEBRATED BONE CUTTERS.

Awarded 1st and 2d prizes at both Rochester (Fair) and Madison Square Garden (Poultry Show) over all other exhibitors. No other bone cutter ever yet received even a 2d prize in competition with it. Four Silver and Bronze Medeals, eight Diplomas and ten First prizes received. Forty-eight editors of such papers as Farm Poultry, Poultry Keeper, etc., etc., endorse it Its superiority is unquestioned. stamp for Illustrated Catalogue, free if this paper is mentioned.

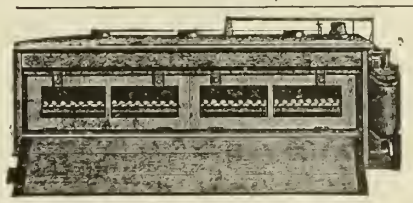
F. W. MANN CO.,

MILFORD, MASSACHUSETTS

BONE AND SHELL FOR POULTRY.

Raw Bone has been proven by analysis to contain *exeo, part of an egg—White, Yolk and Shell.* The fine oyster shells furnishes shell material. The *granulated* size is for *adult* fowls; the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered freight paid at your railroad station, address

FITCH FERTILIZER WORKS, BAY CITY, MICH.



Won at Madison Square Garden, 18 2. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular. **Jas. Rankin, South Easton, Mass.**

Webster & Hannum. Send me 4 more No. 2 cutters. They surpass any cutter on the market. Do more than you say. J. W. Lyder, Akron, O.

KNAPP BROS.

ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD

WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.

Proof—The records at 29 of the **leading** shows during the past ten years—**Highest Honors every time.** We sell annually **hundreds** of **Exhibition** and **Breeding birds** but **never** at **any** price, our **best** tested **breeding** stock, $400 in **one** order at a recent sale, for 18 show birds. **OUR MATINGS** for season of 1893 are made up, having full benefit of our long experience and include the tested breeding stock that produce **sure winners** and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. **100 fine breeding Cockerels,** separate or mated up in **pairs, trios or breeding pens** to suit customers, at reasonable prices for quality. **EGGS** for **HATCHING** from our **choicest matings,** at $5 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $12. Reduction on large orders. Send stamp for illustrated catalogue. Address

KNAPP BROTHERS,

BOX 501, FABIUS, N. Y.

CAUTION!

The statement made by another Bone Cutter Manufacturer, that his Bone Cutter took 1st and 2d over all other exhibitors at Rochester and New York, is *false* and meant to mislead. Our Bone Cutters were not entered in time to compete for premium. *Moral:* when you find a man that wilfully misrepresents, its well enough to let him alone. Get our Circular which speaks the truth.

Webster & Hannum, Cazenovia, N. Y.

ROCHESTER, N. Y., Feb. 4th, 1893.

To whom it may concern:

This is to certify that Messrs Webster & Hannum exhibited a Bone and Vegetable Cutter at our Western N. Y. Fair, Sept. 1892. The said Cutter was entered for exhibition, only as according to the rules of our Society it was too late to compete for the premium offered, but the Judges passed on the machine exhibited by Webster & Hannum and made a report "highly commending" said machine.

H. A. Kingsley, Sec'y.

CAZENOVIA, N. Y., May 1st, 1893.

We, the undersigned residents of Cazenovia, N. Y. take pleasure in certifying to the uprightness and responsibility of Messrs Webster and Hanoum, of this place. They are both well known and highly esteemed in this community and both hold important offices of trust and responsibility with credit to themselves. Any person doing business with them may rest assured they will do just as they agree and always deal honorably and upright.

J. W. Howson, Post Master, Cazenovia, N. Y.
M. H. Kiley, President, Cazenovia, N. Y.
J. H. T. E. Burr, Banker, Cazenovia, N. Y.
G. H. Benjamin, Justice Peace, Cazenovia, N. Y.
C. B. Cook, Supervisor, Cazenovia, N. Y.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P. O. Goochland Co., Virginia.**

LADIES!! Why Drink Poor Teas?

THE GREAT AMERICAN TEA COMPANY

When you can get the **Best** at **Cargo prices** in any Quality. Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums **given to Club Agents. Good Income** made by getting orders for our celebrated goods. For full particulars address

THE GREAT AMERICAN TEA CO.

P.O. Box 289. 31 and 33 Vesey St., N. Y.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Mixing the Breed.—I have some Langshans that have run with a mixed flock. I want to mate them with a Langshan cock; how long before I can have pure eggs?—L. H., Denison, Kan.

About ten days is allowed, but a month is safer,

About Ducks.—What is the difference between the Pekin and Aylesbury duck? 2. How long will eggs be good for hatching after the drake is removed?—J. H., Winnipeg, Canada.

The Pekin has an orange colored bill, and legs of a dark orauge. The Aylesbury has flesh-colored bill, and light orange-colored legs. 2. Probably about five days. Much depends upon conditions.

Pekin and Aylesbury.—Will you please inform me the points of the Pekin and Aylesbury ducks? Quite a number of my neighbors have white ducks, and they all claim they are Pekin. 2. Has either of the above mentioned breeds top-knots?—S., Santa Rosa, Cal.

Both are white, the Pekin having orange colored bill and the Aylesbury a bill of flesh color. 2. No.

Large Lice.—We are troubled with lice. The mites we can easily manage, but would be glad to hear from you more about big lice. Can any of your readers tell me anything about chufas for chicks?—M. B. J., Carthage, Mo.

Use sweet oil on the heads of fowls for the large lice. We know nothing of chufas, but uo doubt they will serve as food if the fowls will eat them.

Brassy Color.—Does a yellow or brassy color on the back of a barred Plymouth Rock cock disqualify him? Can a full stock B. P. Rock cock have this color?—R. H. L., Chapel Hill, N. C.

The brassy color often appears just before the birds shed their feathers. It does not disqualify but it is not desirable.

About Crosses.—If I should cross siugle-comb birds with rose comb what would be the result? 2. Are there rose-comb Minorcas? 3. Are eggs from cross breeds ever sold for hatching? How much are they worth? 4. What is the Standard weight of Langshaus and of Minorcas? 5. Has any number of the POULTRY KEEPER much about Dorkings? 6. Do Minorcas lay as large eggs as the Leghorns?—C. J. S., Flatbush, N. Y.

1. The result will both rose and single-comb chicks. 2. Yes. 3. Very seldom. 4. Laugshan male nine and one-half pounds; Minorca male eight pounds. 5. Yes. December, 1887. 6. Yes.

Probably Scrofulous.—I have a hen with a sore the size of a silver dollar ou its back, just above the vent. I have tried several remedies with no success. The hen is healthy, and has lost no flesh. Please state a remedy?—P. T. K., Clevelaud, Ohio.

It is perhaps scrofulous, or results from an injury. It would be a waste of time to attempt a cure, and the proper course is to destroy her.

Must be Lice.—What is the trouble with one of my heus?—she is dumpish and laid on the nest for two days, but uow stands around with her head bent over. I have put lard on her head, also some insect powder about her head and neck, being afraid of lice. The little chicks are also dumpish aud sleepy?—J. P. W., Spring Lake, Mich.

No doubt the cause is lice—particularly the large lice.

Trees for Poultry Yards.—What is the quickest and best growing tree for poultry shade, *i. e.*, the one that will give shade in the shortest time? 2. Would fowls remain healthy on a board floor if allowed on the ground frequently in wiuter?—R.S. K., Kelly Point, Pa.

Plum, peach or mulberry. 2. Yes.

Preventing Fighting.—Is there anything that will keep roosters from fighting?—H. O. B., Alququerque, N. M.

Nothing but to keep them separate.

Pure-Bred Chicks.—1. How soon can I tell the chicks that are first-class or not. 2. Will the black ever come off the beaks of a Plymouth Rock chick? 3. Is a run 100x50 feet large enough for one cock and ten hens? 4. Would it be best to divide it?—F. N. L., Des Moines, Iowa.

1. You cannot judge of a pure breed's points until it is nearly growu. 2. It disappears as the bird matures. 3. Yes. 4. Yes.

Heat in Hen House.—Is it a good plan to have heat in a hen house in winter? I am thinking of putting in eitber hot water or steau, and only run the beater inside. My coop faces the South, and I have an aisle three feet wide on the North. My pipes would run in this aisle next to the building. You see they will be three feet away from the hens. I only want to keep the heat betweeu fifty and sixty degrees in winter.—A. E. D., Reading, Mass.

It is an excellent plan. Use hot water, and keep the heat between forty and sixty degrees. See Aug. 1891, issue.

Hamburg Chicks.—1. My Hamburg chicks died for me, which were well fed. What is the cause? 2. Why do the wings of the Hamburg chick grow faster than the other parts? Would that cause death?—S. G. H., Sugar Creek, Ohio.

1. It is impossible to give the cause, as it happeus with fowls, humans, and everything. It may be overfeeding. 3. It is the peculiarity of the breed.

Cholera—"Vaccine."—1. Is there a cure for cholera in turkeys? If so, what is it? 2. Where can I obtain the "Vaccine Matter" for vaccinating turkeys?—S. B. C., Rochester, Mich.

1. There is no sure cure. 2. There is no such article. It was a fraud offer of the notorious Bain.

A Batch of Questions.—1. I have a yard, 25x70 feet; my house is about 8x8 feet—how many fowls should I keep on this lot to give them room? 2. Should I keep my hens and pullets in the same yard? 3. Will pullets hatched last April do to breed from this Spring? 4. How much wheat should I give sixteen fowls, twice a day, morning and evening? 2. Some of my hens laid double yolked eggs, and I see by your paper that the cause is too fat. Is that always the case? If so, should I not separate the hens from the pullets?—M. O. A., Bowling Green, Ky.

1. About ten. 2. You can do so, but it is better to separate them. 3. Yes. 4. About oue quart per meal. 5. Large eggs are nearly always so caused. It will perhaps be better to separate them.

Malt—Ducklings.—Some time ago I read in the POULTRY KEEPER about feeding malt to poultry. I can get malt, or the refuse from the vinegar factory; which of the two is best, and how should it he used? 2. Can ducks be raised in brooders as well as chicks, or is it better to let them run with hens? I intend to raise as many ducks next Spring as I can get from the eggs seven or eight ducks will lay.—L. W., No address.

Malt is better, and is exellent. Feed it in the same manner as ground graiu. 2. They are more easily raised in brooders than by hens.

Changing Males.—Is it necessary for me to change male birds, and how often, to keep them pure?—P. A. R., Richmond, Va.

They may be kept for two seasons, but it is change every year, in order to avoid inbreeding.

Chicks Ready Picked.—I have one chicken, six weeks old, that is perfectly nude; no bair, nor feathers, just as if dressed for market. Another that had only a few feathers. Onc appears to be a pullet, and the other a cockerel. Do you think I could raise chickens without feathers iu breeding from them?—J. G. Q., Tioga Center, N. Y.

Yes, it can be done by selection, but they would be at a disadvantage in winter.

Several Points.—1. How often should green bones be fed, and how much to teu heus. 2. How often, and how much, to growing chicks. 3. Is it better to keep the pullets from other fowls. 4. Which is the better way to feed clover to laying hens—to cure it and steam it, or feed it green. 5. Will young ducks thrive in brooders, as well as with hens.—A. P. L., Ithaca, N. Y.

1. Feed one pound a day to sixteen hens. 2. Keep it before the chicks all the time 3. It is better to keep them separate. 4. Feed it green in summer and cured iu winter. 5. They thrive fully as well—perhaps better—in brooders.

Alfalfa.—Is alfalfa as good as clover for feeding to poultry.—E. F. S., Cloverdale, Cal.

Alfalfa belongs to the clover family, and is fully equal to red or white clover.

Plastering a Poultry House.—What is your opinion of plastering a poultry house inside to render it light and warm.—W. B., Gasport, N. Y.

It is the best of all plans, as it leaves a smooth surface for cleaning, prevents lice harbors, and makes the house warm and comfortable. We would always recommend the use of plaster but for the fact that it is a little more expensive.

AN EXPERIMENT IN FEEDING POULTRY.

Two or three years ago I reported for *The Tribune* the details of the poultry business of Mr. P. A. Boyce, my neighbor, at Willow Cr ek, N. Y. He is the largest poulterer in this section, and has an ideal little farm of twenty-six acres, situated at the bank of Cayuga Lake. At that time I suggested that he make an experiment on some line uot covered by any other poulterer, to select his one line and follow it out strictly for a year, keeping accurate accounts aud then report and to have his books ready for inspection by anybody. The problem he undertook to solve was whether or not he could keep poultry in comparatively large numbers in small space without feeding any meat, vegetables or other succulent food, and still keep the fowls healthy and have them return a profit. This was certainly a formidable proposition. The experiment began January 1st, 1892, and closed at the end of the year. Mr. Boyce now declares it "a long time to watch an experiment and attend to details several times a day." He has performed the task for the benefit of an appreciative public. He selected 100 hens for th trial. Their blood was Brown Leghorn crossed upon Plymouth Rocks. The henhouse contains 728 square feet of floor space, divided into three sections. The henyard is 5x5 rods. The morning feed was composed of six parts of wheat bran, two of middlings and one of cornmeal, mixed into a mash with skimmilk in summer and hot water in winter. They had the same feed dry through the day—all they would eat. In winter they were fed a little whole grain of various kinds scattered in straw on the floor to keep them busy scratching and exercising. A dust bath was provided and cracked clam shells kept before them. Fresh water was provided in fowl tanks. They had nothing else whatever except a very little grass that grew in their yard. In all his experience with poultry he never had healthier fowls. He considers wheat bran the best possible ben feed, and asserts that it is a complete substitute for flesh, worms, insects and succulent feed. Here is a detailed statement of eggs laid:

January	587	August	1,262
February	774	September	1,173
March	1,301	October	896
April	1,736	November	484
May	1,637	December	566
June	1,392		
July	1,287	Total	13,086

This is an average of 130 to a hen. The eggs were sold at au average of nineteen and three-fourths cents a dozen, amounting to $215.37. Two hundred aud fifty of them were used for hatching. The value of these should not be deducted because the worth of the manure more thau offsets that. Chickens and old fowls were sold to the amount of $45.81, leaving the original number of a 100 on hand. The cost of feed was $125. Mr. Boyce purchased all the ground feed and charged cash price for the grain feed which he grew ou his farm. To recapitulate:

Cash for eggs	$215 37
Cash for fowls and chickens	45 81
Total	$261 18
Less cost of feed	125 00
Net profit	$136 18

This is $1.36 a hen. The monthly account of eggs laid is a feature of interest, showing as it does the variations with the best cared for hens. Most poultry writers say: "Make hens lay in winter wheu eggs are dear." I am not sure that is good advice. In this account 587 were produced in January and 1,736 in April. This lacks but a trifle of being three times as many. In April eggs were twenty cents. To equalize matters the January eggs ought to have brought sixty cents when they were but thirty-two. To intending egg-producers: "Look before you leap." *Cor. N. Y. Tribune.*

SOFT-SHELL EGGS.

We wish to state to readers that when the hens lay eggs with soft shells, there is nothing that cau be given them to prevent the difficulty. The cause may always be traced to one source—overfeeding. If soft-shell eggs are noticed, the hens are too fat. It is because fat is an obstruction to the laying hens that the eggs are imperfect in any respect. The custom is, when the shells are soft, to give the hens oyster-shells in order to provide lime for the egg-shells, but the remedy is uot known to be effective. Whenever the hens begin to lay eggs with soft shells, nothing can be done to prevent the evil but to reduce the hens in flesh, which may be done by placing them on a starvation diet for awhile, and also compel them at the same time to work for every ounce of food they receive. Active breeds are not so subject to the difficulty as are large breeds that are kept in confinement. The shape and size of the eggs largely depend upon the condition of the hens.

POOR SELLING POULTRY.

The markets have been crowded this season by a great deal of poultry that is unmarketable, and those who send such birds to market should learn a lesson from their losses of this season. There must be loss to the shippers, for the small prices which they have received for this bad poultry cannot have remumerated them much for their labor and expense of raising them. A great deal of the western aud New York state poultry have shown great signs of carelessness or ignorauce in preparing the birds for sale, and this poorly-prepared stock has been in a continual state of dullness. Even when high quotations were ruling for other birds, this iuferior stock dragged along slowly at low prices.

These fowls are prepared in a very slovenly way, and in order that they could be plucked easier they have been soused in hot water, and then the feathers have been pulled off in handfuls. The crops have generally been full of indigestible food, while such carelessness has beeu shown in removing the intestines that decided traces of them have been left in the birds. Now all this indigestible food and unremoved intestines have soaked iuto the carcass of the bird, and has discolored it so that the bird looked unfit for eating purposes. The bad stuff decomposes and soon smells.

Then the birds are frozen to check further decomposition, aud are thawed out again when placed upon exhibition for sale. Again it is frozen, and then thawed out, until its odor is so unsavory that the dealers must dispose of it in the ash barrel to keep the rest of his meat from heing tainted. A few cheap boarding houses buy these chickens occasionally, and sometimes they take them when almost too strong for the sense to stand. But the prices paid are ridiculously low, and the returns to the shipper must be very small.

Pennsylvania, Delaware and Maryland poultry, as a rule, show better care in handling, and they have a name that will generally bring for them several cents per pound more. This poultry, as a rule, is sweet and well fed, the crops are taken out (but, unfortunately for the shipper, they are torn through the skin, and not drawn through the neck, as should be done), and the whole appearance of the birds is attractive.

A word of advice to those who have good poultry to ship should be heeded. If they wish to command the highest prices in the market for their dressed poultry, they must be cleanly prepared. In killing, the head should not be removed and the throttle should be nearly cleared of blood. The birds must be plucked dry, and without tearing the skin. All of the intestines should be removed carefully and fully, aud the inside should be wiped dry with a cloth. The crop should be removed through the ueck, and the intestines removed by widening sufficiently the natural vent. These carcasses should then be hung in a chilling room for half a day, and then placed in clean crates to be forwarded to the refrigerating car. Iu this condition they will reach the markets ready for sale, and they will keep nice for weeks and not lose their attractive appearance.—*American Cultivator.*

DAMAGE BY HAWKS.

We know of no method that will protect chicks from hawks, if the chicks are permitted to run at large. A yard covered with wire netting is the best protection, and it will pay to have such a yard, as the destruction by hawks is enormous. The farmer does not know the extent of the damage done him by hawks, as there are scores of chicks destroyed of which he is uot aware. He simply knows that they are missing, and there is no way to save them except to shelter them until they are large.

RAPID FEATHERING OF CHICKS.

Young chicks are constantly producing feathers, and when they begin to lose their down and shoot forth the tiny tail and wing feathers it is a weakening process to them. For that reason more chicks seem to die when they are three or four weeks old thau when younger. The remedy is to keep them warm and feed them every two hours on a variety of food, consisting of anything that they will eat; but once a day a little lean meat, cooked, and hone-meal will be fouud highly beneficial to them.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, where by each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

Vol X. PARKESBURG, PA., NOVEMBER, 1893. No 8

CONTENTS.

Mr. Johnson's Poultry House, (Illustrated)—Lameness in the Flock—Foraging and Foods—A Kink on Plucking and Scalding—Scotch Brahmas—Probably High Feeding. 113
What is an Egg?—Something About Ventilation—Our Sentiments on Abuse—Feeding Cut Bone—The Large Breeds—Roup—Bran and Middlings—Working in the Manure Heap. 114
White Indian Games, (Illustrated)—Utilizing Bulky Refuse—Begin With Incubators—The Division of Poultry—Drawn and Undrawn Poultry—Growing Fowls—Precautions for Winter—Roosting in Trees 115
The Cause of the Chicks Dying—Laying Plans for the Future—The Bronze Turkey—Insect Powder on Chicks—Hatches them Right Along—Feeding Three Times a Day—Beats the Hens—The Life of the Poultry Raisers—Paid the First Year. 116
An Ohio Man's Experience—Good Hatches but Hard to Raise—Gives all the Details—Effects on the Offspring. 117
Brief Remarks from Readers: Good for a Beginning, as 200 Hens, Feeding Meat, Must Eggs Rest? Packing Houses for Poultry, Hot-Water Incubator, Brood Hens, Per ian Insect Powder for Gapes, Good Hatching, Remedy for Crop-Bound, The Brooder, Incubator Experience, Will Strike Higher, Uses Hydro-Safety Lamp, A Curious Cross, Nest Eggs in Winter—A Lump on the Jaw—Lane's "Continuous" Sitting Box, (Illustrated)—Gets Into the Corn Trap—Worms or Cholera. 118
Mr. Munger's Bronze Turkeys, (Illustrated)—Crop-Bound Fowls—Fowls for Profit in Winter—Not Profitable—Raise Your Own Males. 119
Editorial Items—Poultry for Profit—A Disease Preventer—Management of Young Chicks—Philosophy and Facts—Southern Ohio Poultry Show. 120
Bound Volumes—The Poultry Keeper Special—This Beats All—Depending on Whose Axe—Something You Want—Mr. Cushman on Crossing—Value of a Score—Still Harping on Corn—Enemies of Poultry. 121
Hens Eating their Eggs—Light Brahma Crosses—Make a Home Market—Chicks that are Feathering—Mixed Food—Cash for the Work—Dorkings and Crosses—How Many Eggs to a Pound—Pure Breeds for Improvement—Mating for Hardiness—The Home-Made Incubator—No Eggs—Common Flocks as Layers—Invigorating the Breed Variety and Results—Cut Clover—Frosted Combs—Poultry Manure 122
Egg Eating by Fowls—Broken Flint as Grit—The Breeding Turkeys—Gapes—Feeding Hens to Make them Set—For What are We Breeding Fowls?—Autumn Management of Poultry—The Foundation Stock—Fruit in the Poultry Yard—Leghorns as Winter Layers 123
The Mann Bone Cutter, (Illustrated)—French Experiment in Feeding—How to Treat a Man, By a Horse—Signs of Thrift. 124
Prices for Eggs—Spreading Disease—Dry Food Continually—Treatment of Show Birds—Snow Storms and Poultry—Refuse from Factories—Keeping Geese—Egg Flavor Due to Feed—Crossing Leghorns—Dry Food in Winter—Young Broods—Dogs Eating Eggs—Heavy Males—Too Many Loafers—Troughs in Winter—Shipping Broilers—Brown Leghorns—Ducks for Laying—Why Sitting Hens Cease. 125
Fall Work—Mating Rouen Ducks—About Killing Poultry—Feeding Dough—Owls and Hawks—Advertisements. 126
Advertisements. 127
Bureau of Information—Corn and Fat Hens—An Egg Ration—Publisher's Department. 128

THE DOG FANCIER.

The *Dog Fancier*, Battle Creek, Mich., is a paper devoted entirely to dogs, and is a good one, published monthly at only fifty cents a year, or seventy-five cents with the POULTRY KEEPER. Its pages are filled with good reading, and the editor, Mr. Eugene Glass, is aiming to make it worth twice the sum asked. He will send a sample to all desiring.

MILLER PURVIS now owns a half interest in the *Michigan Fancier*, and is also its editor. The *Fancier* is published monthly at Detroit, at fifty cents per year. It and the POULTRY KEEPER together, only sixty-five cents.

MR. JOHNSON'S POULTRY HOUSE.

A plan for a poultry-house has been sent us by Mr. S. Johnson, Odon, Indiana, the cost of which is $18 for lumber and $5 for labor, or a total of $23. It holds 100 fowls. It is ten feet wide, six feet high in front and four feet at the rear. The house is thirty-two feet long, having two rooms, each eight feet wide, and one sixteen feet wide, the room A being the laying-room; B, the feed-room; and C, the roosting-room. The perches are one foot from the floor. DD shows steps for reaching the floor. Underneath is lattice railing, enclosing the under portion as a resort in rainy weather. W W are windows. E E E are ventilators. The house can be made of any size or height, and the interior arrangements may be as preferred.

LAMENESS IN THE FLOCK.

Lameness may be occasioned by general debility, due to many causes, and also to roup. The following letter is from Palatka, Florida, which shows some of the difficulties in that avise:

"I have raised over 100 nice chickens this summer, and generally keep fifty or sixty hens. We have some trouble with them, and lose a number every year. Some of them get a white bunch on the back of the tongue and soon die. Some get lame in one leg and then in the other, and lay around until I kill them. Appetites are good. There are no males with them."

MR. JOHNSON'S POULTRY HOUSE.

It may be high roosts, or some parasitic trouble due to the climate. The "bunch" under the tongue is perhaps canker, but it is difficult to state cause of the lameness. When hens are fat, and jump from high roosts daily, the result is always lameness. The symptoms are not sufficiently described to enable us to give an intelligent reply.

FORAGING AND FOODS.

It is the hen that works for her living which lays the eggs. When on a range the hen can supply herself, but when she is confined and fed all she will eat she becomes indolent, sluggish, and does not make a good layer. Regarding Light Brahmas as foragers the *Fanciers' Gazette* (through Mr. F. M. Clemens), says:

Some people seem impressed with the idea that the Light Brahma is not a good forager. This is true of fowls kept in small runs and stuffed at regular intervals until by their natural tendency to put on fat they get into an almost helpless condition of obesity. My Light Brahma chicks are fine foragers and keep up well with my Buff and Black Wyandottes when it comes to scattering over a pasture lot in search of the festive grass hopper. What the novice at Light Brahma breeding needs to learn more than anything else is to learn how to feed them. There is little danger of overfeeding, while the chicks are growing as the food is then consumed in the formation of bone and muscle, but to keep Light Brahmas in a confined run and feed them liberally on fattening food is folly. Light Brahmas chicks are as hardy as the hardiest. They are less ungainly than the Plymouth Rock. Coming from the shell a beautiful mass of white fluff, they soon begin to stretch out and head everything in the race for size in a few weeks. The man who can breed Light Brahmas for years watching the growth of the chick from the round downy ball through the ungainly period of putting on plumage, up to the perfect fowl and not fall in love with the breed is fit for treasons, strategems and spoils. The matured Light Brahma showing the marks so much desired, the pure white contrasted with pencillings of glossy black in neck and tail, profusely feathered shanks and toes, a broad, square body set on legs of medium length, and above all a characteristic Brahma head, broad skull with triple comb and deep bay eyes, such a Brahma is a picture on the lawn or in the show coop. That the demand for the Light Brahma, in spite of the many years it has been before the public, is greater than ever before shows that the above facts are appreciated.

The gist of the above is that *any* breed—even the large Light Brahmas—will forage if made to do so. Of course there is no such thing as foraging in winter, but it should be a rule not to feed hens in summer if the range abounds in grass and insects, as the hens will not work if they are fed before going on the range.

Make your own range for winter by having a place for the hens to scratch, not by throwing a small quantity of litter on the floor, but by *covering* it to the depth of two or three inches, and then scattering a *gill* of millet seed over the litter. If you want eggs make your hens *work*. Laying hens need more food than the non-layers, but the main point to observe is to *keep your hens at work*.

A KINK ON PLUCKING AND SCALDING.

As the plucking of the feathers from birds is a very disagreeable business, we give below an item from the *Fancier' Journal*, in which it recommends rosin, and says:

The *American Poultry Yard* says there are some people who object to scalding fowls preparatory to removing the feathers. Prof. Blot among the number, on the ground that it injures the quality of the flesh. With all respect for the renowned professor the *Yard* does not believe the difference is worth minding at all. Plucking the fowls is tedious enough at best. If there are any who want to operate without the aid of the scalding process, let them do so, and when they are tired of it let them try the following improved method:. Dip the fowls in cold water and let them drip. Then apply finely pulverized rosin to the feathers, using a dredging box for convenience. Then scald in the usual way. The rosin sticks the feathers together so that the pin feathers come out with the others, saving much trouble. Apply about half a teacupful of rosin to a fowl. Use the common crude article. It is cheap stuff, and its cost is made up ten times over by the labor saved."

We give the above for what it is worth, and though the suggestion may be a valuable one we confess that we have not ourselves given the method a trial, but place it before our readers, however.

SCOTCH BRAHMAS.

The following is a letter sent us by a reader at Guilford, Kan., in regard to some eggs he procured of a breeder who claimed them as Scotch Brahmas. He says:

At a fancy price the writer here procured a setting of eggs (from another advertiser) which said eggs were from a breed (so said) new to this country, known as Scotch Brahma, which was claimed to be a featherless legged chicken. The only chick hatched from the eggs had fuzzy legs. What I want to know is whether or not there is such a breed as Scotch Brahma? If so give discription.

There is no such recognized breed in the Standard, and if the one chick hatched fuzzy legs (though claimed to be from fowls with clean legs), it shows that the party selling them misrepresented them. We would advise our readers, if they desire Brahmas, not to expend their money on birds that are not recognized, but stick to the old established kinds.

PROBABLY HIGH FEEDING.

Mr. Benjamin Sparks, Lawrenceburg Indiana, desires to know what ails his flock and in a letter below we give the symptoms Mr. S. writes:

"Several of my hens are well in the morning and in the evening are dead. The symptoms are as follows: When I put my hand on them they sing, and squat down on the ground and shut their eyes. It is not roup or cholera. I feed wheat, cabbage, and butcher cracklings. They appear to be healthy and combs red."

The cause is probably appoplexy, due to high feeding, the hens no doubt being very fat. It is a common occurrence. The hens are apparently as healthy as may be desired and one or more will be found dead under the roost. The only remedy is to reduce the food. If necessary starve them for a week.

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of the paper for a year.

WHAT IS AN EGG?

An egg must contain all of the elements to produce a chick, and as Mr. R Warrington, of England, has recently made some experiments in the chemistry of eggs, we believe his results will be of interest to our readers. A good hen will produce at least five or six times her weight of eggs in the course of a year. The average weight of an egg is two ounces. About twelve per cent. of it is shell. Chemically the white and the yolk have these compositions:

	White.	Yolk.
Water	85.4	50.6
Nitrogenous substance	12.9	16.1
Fat	0.3	31.4
Other non-nitrogenous matters	0 8	0.5
Ash	0.6	1.4
	100.0	100.0

The above shows that the yolk contains less water than the white, hence is drier, and also contains nearly all of the fat and the larger proportion of ash (mineral matter). The ash consists of lime, potash, soda, etc., and the proportions are best shown as follows:

	White.	Yolk.
Potash	31.4	9.3
Soda	31.6	5.9
Lime	2.8	13.0
Magnesia	2.8	2.1
Oxide of iron	.6	1.7
Phosphoric acid	4.4	65.5
Sulphuric acid	2.1	—
Silicia	1.1	.9
Chlorine	28.8	1.6

The white is thus rich in alkalies, potash and soda, a part of the latter being apparently present as common salt. The yolk is extraordinarily rich in phosphoric acid; it contains also much more lime than the white. It is, in fact, the part of the egg which contributes most to the formation of bone.

Chemists have often figured out the amount of fertility taken away from the soil in different crops. Viewed in this way, 1,000 pounds, or 666 dozen of hens' eggs, shells included, contain, of the most important constituents, the following quantities:

	Pounds.
Nitrogen	20.00
Potash	1.75
Lime	60.82
Phosphoric acid	4.22

In other words, 8,000 eggs, worth at least $160, take only about $3.56 worth of fertility from the farm. To notice what little fertility is taken from the farm by eggs, we give below the comparative value of the fertility sold in $160 worth of eggs:

Eggs	$ 3.56
Wheat	42.28
Milk	14.08
Cheese	11.04
Live cattle	18.88
Timothy hay	95.84

These are but illustrations of many crops that take the life of the soil away. Butter is the only crop that takes less than eggs, dollar for dollar. Think of selling $160 worth of wheat in the form of grain! With it goes $42.28 worth of your farm. Feed that wheat to hens and sell the same amount and the farm loses $3.56 worth of its fertility. Can't you see when you sell the egg you sell water, a substance that does not weaken your soil a particle? You can also go a step further and sell blood when you manage your flock of hens with such skill and care that a continuation of their record is worthy of going down the ages, you can get blood prices for your eggs.

As to the feeding lessons learned from the analysis of an egg, Mr. Warrington says: "A good cow may produce in a year six times her weight of milk, with a calf in addition. If we take the cow as weighing 1,000 pounds, we have in the salable products about 800 pounds of dry matter, containing 36.8 pounds of nitrogen. Hens of good laying breeds, weighing 1,000 pounds, will yield in the same time 6,000 pounds of eggs, the contents of which will include 1,404 pounds of dry matter, containing 120 pounds of nitrogen. It has been often pointed out that since cows' milk is much richer in nitrogen than the carcass of an animal, so the food supplied to cows in full milk should be of a specially nitrogenous character. The argument has still greater weight in the case of the hen, as we have just seen that her produce, in the same time, from the same body weight, contains three and one-quarter times as much nitrogen as that of the cow. The albuminoid ratio of eggs is, indeed, as high as 1: 1.82. Under natural conditions, a fowl's diet is in the summer time of a decidedly nitrogenous character, the food consisting largely of insects, worms, etc. The advantage of giving hens a good 'run' is well known; this is partly due to the active exercise obtained, which is essential for a continuance of the egg-laying condition, but is also in part owing to the supply of insect food which the hens then obtain."

In the above tables it will be noticed that the yolk is nearly as nitrogenous as the white, yet poultrymen feed corn and wheat in winter, which is unsuitable for the production of an egg, simply because too much fat is thus given and not enough nitrogenous substance. When our poultrymen and farmers learn that there is a little *science* in keeping poultry they will be better enabled to make the business pay. There is plenty of money in the poultry business but it must be gotten out only by *intelligence*. The old-fashion method of feeding hens on grain only must be discarded. Meat and bone are substances that *must* be used. Grain is excellent as a portion of the ration, but meat and bone are complete foods that may be used at all seasons.

SOMETHING ABOUT VENTILATION.

The hardest task we have is to prevent our readers from killing their birds with fresh air. Fresh air has killed more birds than all other causes combined. A few days ago we visited a brooder-house 100 feet long. The owner's first hatch for the season was just out, and he had fifty tiny little chicks, only a few hours old. He had the top of the window down to give them fresh air, and yet he had *fifty-four* in a basket, not a foot long, all tucked under a blanket, which he had not yet put in the brooder. A poultry-house can hardly be too close in winter, and the following letter from Huron, Ohio, describes a close house, the writer saying:

I suppose you will give me the laugh when you read about the same old chestnut —ventilation—but I feel as if I was up a tree on the subject, and would like a little information, and as you are so kind to other people, I take it for granted you will be so to me in my ignorance. Now I have a coop 12x20 feet, eight feet studding, with a roof one-third pitch. It is double boarded, with very heavy tarred papor between the boards. The floor is built the same way, and I am going to plaster it. In fact it is lathed now, and when plastered I think it will be a very comfortable place for my hens this winter. Now, all the ventilation it will have will be what air can leak through two windows, one in each end, after a heavy shutter is let down and bolted over them. I should think that I ought to let in some air, but as you preach no ventilation so much I thought I would get your opinion on it and do as you say, for I am glad to take such advice as the POULTRY KEEPER can give me. By the way you have no idea of the enjoyment I get out of the POULTRY KEEPER, and my wife the same. It is a grand paper, especially for a beginner as I am. I do not think water will freeze in my coop in the coldest weather.

We do not see the necessity for making a house close and then letting the cold in. It is at night that the damage is done. We would suggest that the door be left open during the day, and the bottom of the door not fit very tight. If ventilation must be had let it come from the bottom in the winter. *Never ventilate over the birds.* Remember *that*, and you will save many cases of swelled eyes and heads.

The great curse of the poultry business has been the top ventilator in winter. The poultry house mentioned above is probably as close as any in the country, yet the cold air *will* get in from some source. The great difficulty is to keep the cold air out. Warm air is not impure air, and it is not necessary to freeze the birds in order to provide *fresh* air. We have never known birds to die of suffocation in winter, but hundreds die from fresh air.

OUR SENTIMENTS ON ABUSE.

The *Fanciers' Journal* has the following, which we commend to those who rush into print to clamor "fraud" on the slightest provocation:

The *American Poultry Yard*, in a late issue, has a long editorial on courtesy among fanciers, and takes occasion for giving such as are contrary, pugilistic and slanderous a "systematic raking down." The *Yard* refers to discourtesies in the poultry press, to the attacks by anonymous writers, and to the cruel treatment of those "who never injured them or crossed their path in any manner." *The Journal* seconds the *Yard's* motion to quit this mud-slinging business, for nothing is so distasteful in any publication as a continual harping at each other. So much criticise in the poultry press has turned from valuable discussion to insults, mean joking and arguments that are anything but instructive. *The Journal*, having become disgusted with this kind of editorial work, believes with P. H. Jacobs that the only way to give poultry instruction is to have "chicken" before the readers all the time.

Cattlemen, horsemen, flockmasters, and others who are engaged on the farm, or in stock raising, never resort to denunciation. We can excuse a buyer for making charges against a breeder, but when a breeder, who knows—or ought to know—the difficulties met by poultry breeders, denounce others as frauds, he is simply causing distrust to fall on all. It is a system of warfare known only to poultrymen.

FEEDING CUT BONE.

Bone makes the chicks grow, and our readers all praise it. The following letter from a Connecticut reader has some questions on the subject which deserve reply. He says:

I wish you would tell me, through the POULTRY KEEPER, if it is possible to feed young chickens or laying hens too much green bone. I do not feed any fat meat, but I give them all the bone they will eat clear. Is it the best way to feed it clear, or mix it with meal and bran? Are small potatoes of any great value to feed in winter? If so, how is the best way to feed them?

I have a Webster and Hannum green bone cutter, and it is a little poultry raiser. It is the thing for any one that has got anything to do with poultry. I have only had it a short time, and my poultry are growing as fast as weeds. Some say I feed too much, and that is the reason that I ask the question above. I have some chickens that are lame; they seem all right except weakness of the legs. They are a cross Indian Game and Plymouth Rock. They weigh two and one half and three pounds each.

Fowls will not consume too much bone if they have a variety of food. The best way to feed it is to place it on a clean board before them, unmixed with other food. An ounce for each hen (one pound for sixteen hens) is sufficient, It makes young chicks grow so fast that they become weak in the legs, but the weakness soon passes away, and no harm will be done. Small potatoes are excellent for fowls and chicks also, and may be thrown to them, as they can easily pick them to pieces.

THE LARGE BREEDS.

There is one advantage possessed by the large breeds which some consider as a defect, and it is a defect unless the farmer uses judgment in feeding his flock. We allude to the inability of the large breeds—Cochins and Brahmas—to fly. Of course this inability to fly implies lack of motive power in other respects, and it also indicates a tendency to inactivity rather than to foraging. It is also well-known that the large breeds have but little breast meat, a fact which is apparent when we consider that the birds which fly have the muscles of propulsion on their breast.

The poultryman loses the breast meat, the activity, and the early maturity of the breed, when he selects the Cochin or Brahma, but he gains large size, adaptability to confinement, and saves quite an item in the cost of his fences. His garden is safe from his hens, and he never finds one of them on the outside of the poultry yard.

What the poultryman must learn is how to feed the large breeds of fowls so as to have them in good laying condition. It has been stated that the Brahma and Cochin are enormous feeders, and that it costs more to feed them than for Leghorns or other small breeds. This is true to a certain extent, as it will cost more to keep any kind of large animal or bird than a smaller one, but the farmer must regulate the food himself for the fowls, and not allow them to eat as much as they desire, owing to the large breeds more readily taking on fat, due to their inactivity.

The large breeds will be satisfied with a greater share of bulky food, which is cheaper than grain, such as potatoes, cut clover, cooked turnips, etc., though they require meat and grain also. They will endure the winter well, and give good results for the food consumed. The mistake usually made in feeding them is in giving them too much grain. Their somewhat inactive habits cause them to become fat when highly fed on grain, and it is not economical to feed them so as to make them fat if eggs are desired. If this matter of providing more bulky food, and less grain, is considered, and judgment used in feeding, the large breeds can be kept as cheaply as the smaller kinds.

ROUP.

The hens eat heartily until they die, says a subscriber, and he states that they are poor in flesh, combs pale, no lice, yet they die, showing no symptoms. The food is grain and potatoes. The difficulty is probably roup, which is of a form affecting the fowl as consumption. There is sometimes a discharge from the nostrils, and again large lumps appear on the head and body. When this happens it indicates a scrofulous form. To attempt to cure either disease is as difficult as to attempt to cure the same in human beings. One cannot afford to administer doses of medicine daily to a flock of hens. The hens afflicted as mentioned are constitutionally weak, and have inherited the disease. The remedy is to destroy them and begin anew, first disinfecting the premises. Some of the difficulties arise from draughts in the poultry-houses, and when only corn and potatoes are given the hens become enfeebled from a lack of more nutritious food. Roup is an insidious disease, and may be present when least expected.

To prevent roup is something not very easily done, as the fowls are effected by the weather. In cold, dry seasons the roup does not prevail as much as in the fall, when the rains are frequent, the ground wet, and discomfort exists in the poultry-house. To guard against the disease, the windows should be so arranged as to permit of plenty of sunlight, in order that the floor and walls may be warmed and moisture may be evaporated. While the pure air may be admitted when desired, through the doors and windows, it should not be overlooked that drafts of air on the birds is liable to hasten an outbreak of the disease. By keeping the floor well dusted with fine, air-slaked lime, the disease may be checked in the beginning and the room made dry.

BRAN AND MIDDLINGS.

Bran and middlings are excellent food in winter, as they contain more of certain substances than do the whole grains. The middlings are sticky, and when scalded are of the consistency of dough, a condition which is not agreeable to the hens. To obviate this difficulty not more than one-fourth of the mixed ground grain should be composed of middlings. An excellent formula is one pound middlings, two pounds bran, one pound ground oats, one pound cornmeal, and one pound ground meat, scalded with boiling water an hour before using, and covering the vessel to retain the warmth. There will be just about enough middlings to cause the mess to stick well. It should be fed in the morning, allowing the hens only half a meal, and it should be given in troughs. Whole wheat may then be given as the balance of the meal, which should be scattered, so as to make the hens scratch for the grains. The object in allowing only half a meal of the mixed food is to avoid overfeeding of the hens. About a pint of the ground grain, dry, is sufficient for ten large hens, with a pint of wheat or corn, for one day, but it is best to give half a pint of the ground grain, and half a pint of wheat or corn, in the morning and a pint of wheat or corn at night.

WORKING IN THE MANURE HEAP.

If the hens can have access to the manure heap, we know of nothing that will be of greater advantage to them. They secure many morsels of food that would be otherwise of no value, and they take exercise in scratching. The real secret of egg-laying in winter, as we have stated frequently, is the exercise, and for this purpose the manure heap answers admirably. It must not be overlooked, also, that the hens will perform good service in assisting to make the manure finer. The best way to prepare manure for a garden is to turn the hens on the heap.

WHITE INDIAN GAME.

The illustration of White Indian Games is to call attention to a breed which is white in color, and with yellow legs and skin. Mr P. A. Webster, Cazenovia, N. Y., who makes them a specialty, imports his birds from England, and Mr. Webster, in describing them, writes us as follows: "They are the best all-purpose fowl in existence. The most wonderful layers, equalling—if not surpassing—the Leghorns. As table fowls they are fully up to Cornish Indian Games. The only fowls of this variety ever sent to America by the originators in England were sent to me, and I have succeeded in raising a grand lot. Nothing is handsomer than a flock of these fowls, and none more profitable, whether you raise them for broilers, for the table, or egg producers. This variety has all of these qualities. Legs and skin a deep yellow, and plumage snow-white, and for size are fully up to the colored variety of Indian Games. I anticipate the greatest boom ever known for these fowls." Mr. Webster has both the Cornish Indian Game and the White, and he places the latter far ahead. He has just imported thirty fine birds from England. He has been interested in the breed for five years, but would not offer them until he had given them a full test on his farm, where he has ample facilities, and also to breed from his imported stock with a view of having his birds fully acclimated. That the breed is a valuable one for those who desire delicacy of flesh, plump carcasses, and good prices for choice poultry we have no doubt, and their white plumage renders them more easily dressed for market, as the pin feathers do not so readily show.

UTILIZING BULKY REFUSE.

A large amount of valuable material may be utilized if cooked. Pea-pods, string beans, apples, squashes, and many other articles, if placed in a pot and boiled until done, will furnish a quantity of food that is really more serviceable than too much grain. Ducks and geese may be kept at but little expense by such mode of feeding, while turkeys and chickens will appreciate the change at once. Turnips and carrots, if cooked and feed to all kinds of fowls, will furnish a cheap and nutritious diet, promoting the health and preventing too much fat. In feeding such material no grain is necessary except at night, when whole corn, wheat, and oats should be given. One of the most valuable foods is cooked potatoes and sour milk. If this is fed, being first thickened with ground oats, it will cause the hens to lay more eggs than when an exclusive grain diet is given. Fowls should have plenty of bulky food if they are to be made profitable.

BEGIN WITH INCUBATORS.

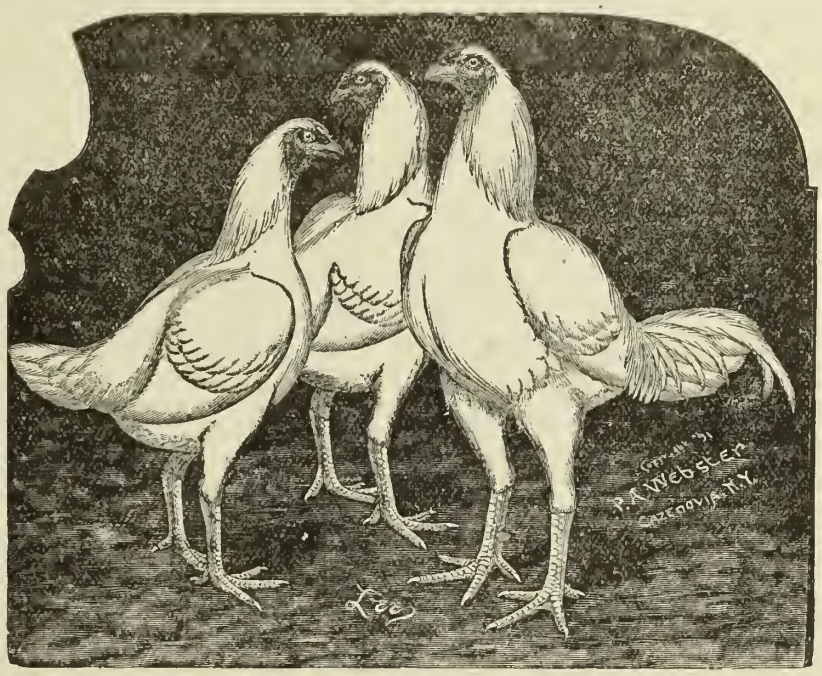
The best month for beginning with incubators is November, so as to have the first lot hatched by the latter part of that month. The chicks will then weigh about a pound and a half by the first week in January, when the upward turn in prices will begin. Just what the prices may be cannot be anticipated, but they depend upon the quality. The chicks should be sent to market dressed. The cold weather will be too severe for the shipment of such young stock, as some of them may die on the route. There will probably, at that season, be a difference of ten cents a pound in favor of dressed chicks, which will more than pay for the cost of dressing them. As there will be no danger of decay in winter, they will keep for any length of time, and the commission merchants' charges will be lessened.

The object in hatching early is to not only have the chicks of a proper size to be sold as soon as the demand begins, but also to make up for any deficiency in growth, as one-pound chicks are usually in demand when the broilers (or spring chickens) first come in. Another point is that the work is usually done in winter, and will not interfere with other operations, which in one respect really lessens the cost, as many persons are often idle during that time. What is it that causes the prices for chicks to be so high? It is the care and work required to hatch and raise them, and so you must consider that this attention, which the consumers are willing to pay for, must be bestowed. It does not cost over five cents per pound of meat in the shape of broilers, and yet the prices often reach fifty cents per pound, or ten times the cost, but this extra sum is what the producer obtains for his labor.

We send this paper six months on trial for only twenty-five cents.

THE DIVISION OF POULTRY.

The figures recently promulgated as to the value (estimated) of poultry raised and eggs produced in the United States during the year 1892, caused universal attention to be directed to an industry that in one year added to the wealth of the country the enormous sum of $318,000,000. Those in the business were not prepared for this vast amount, and the disinterested non-breeder was filled with incredulity and derided the idea that the "hen business" was represented by any such figures. Then it must be remembered that these figures, great as they are, are only based on the hen at fifty cents per head and on the market value of eggs at the year's average price. If there were added to this the fancier's price for his fowls and eggs, the sum would probably be increased one or two million dollars more. The thoughtful breeder began to compare the value of the poultry industry with other interests, and when it was found that the poultry industry equaled in magnitude any rural industry and excelled many others, the question arose if these other interests, many of much less importance commercially and agriculturally, were recognized and fostered by the government, why should not the poultry industry have a full recognition and become a part of the Bureau of Animal Industry of the Agricultural Department of the government?



WHITE INDIAN GAMES.
Owned by Mr. P. A. Webster, Cazenovia, N. Y.

No doubt all over this great land the question came to the mind of the intelligent poultry breeder, but it was left for the Los Angeles County (California) Poultry Association to "set the ball rolling," which was done by the passage of a set of resolutions, at the April meeting of the association, calling the attention of the Secretary of Agriculture to the importance of the industry, setting forth its value to the country, and asking for its recognition by the government from an economical and financial standpoint. Copies of these resolutions were forwarded to the poultry and agricultural papers and the poultry associations all over the United States, and a certified copy, accompanied by the proper petition, sent to the Secretary of Agriculture at Washington. I am pleased to report that no spirit of jealousy was evinced by the sister associations, but, acting for the common good of all, they have generally indorsed the resolutions and joined us in petitioning the secretary; and the rural and poultry journals have published the resolutions, and favorably commented on them, thereby bringing to the carrying out of the project the "power of the press." That all these efforts have not been useless, the following letter received from the secretary will show:

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
WASHINGTON, D. C., August 17, 1893.

C. T. Paul, Pres. Los Angeles Co. Poultry Association, Los Angeles, Cal.:

DEAR SIR—I am in receipt of your communication of the 3d instant, addressed to me on behalf of the Los Angeles County poultry Association, and enclosing resolutions of this society, requesting an establishment in this department of a division of poultry. I will inform you in reply that there is in my judgment no occasion for the establishment of a special division of the interest of the poultry industry, inasmuch as the bureau of this department known as the Bureau of Animal Industry is charged of the country, that it is at present, in my opinion, fully authorized to perform whatby the law with duties of such general character in relation to the animal industry ever functions it may be proper for this department to undertake with reference to the poultry interests.

Yours is one of several communications I have received from individuals and associations, representing the poultry industry, looking toward a fuller recognition of the poultry industry in the economy of this department. Believing that the first thing to be done in this interest is to present such facts and figures in regard to it as will reveal to us its actual importance, agriculturally and commercially, I have, as a preliminary step, instructed the statistician of this department to take measures to procure all the information available with reference to the poultry product and consumption throughout the country; and I bespeak for him, in carrying out these instructions, the hearty co-operation of all such associations over which you preside. Very respectfully,

J. STERLING MORTON, *Sec'y.*

Now, what is the farther duty of the poultry breeder? Shall he sit supinely by and wait for the realization of his hopes? I say, No! It is now that the work begins, and if we want the government to institute investigations as to the progress of the poultry industry in the future and, by its experimental stations, to be established all over the country, indicate to us the best methods of mating, rearing and breeding fowls, settle for us the questions of climatic requirements of the various breeds; the influences of sunshine and shade as applied to poultry, and issue voluminous reports relative to the industry; if we desire all this, I say, then we must be up and doing. Let me suggest that in compliance with the wishes of the secretary, as expressed in his letter, "the hearty co-operation of all such associations" in assisting the statistician of the department, it would be advisable and the proper thing for all associations in the various States to inaugurate an investigation as to the value of the poultry in the State; annual value of poultry raised in the State; annual value of eggs produced in the State; annual value of the poultry imported into the State; annual value of eggs imported into the State; annual value of poultry exported from the State; annual value of eggs exported from the State; annual consumption in the State of eggs and poultry; number of persons engaged in raising poultry, etc., etc., and all available data in reference to the industry, so that the statistician may be able to prepare and present a full report as to the poultry industry and all matters in relation thereto and in connection therewith.

The ready and prompt response of the secretary would certainly indicate his willingness to grant the request of the poultry fraternity, and upon a proper showing place the industry where it belongs as a part of the Bureau of Animal Industry, and under the fostering care of the government.

Let us, as poultry breeders and interested parties, do our part faithfully and intelligently.

JOHN C. STEDMAN,
Sec'y Los Angeles C. P. Association.

DRAWN AND UNDRAWN POULTRY.

Is a fruitful theme of discussion between the breeders, dealers and consumers of it, and is one that will result in no harm so long as one does not say to the other "you shall not sell poultry undrawn." I am aware that consumers argue from the standpoint of the waste there is in purchasing undrawn poultry with their heads and feet on, but they should remember that they are not paying so much for it on that account, which equalizes the cost. The gain realized by not drawing it, and cutting off the head and feet, is confined to two persons. The breeder who sells his stock by weight, and the dealer who buys his stock alive and dresses it before shipping. There is a class of persons who oppose the sale of undrawn poultry on the plea that it is unhealthy, and the contents of the crops and entrails soon decay, and the offensive odor arising from this decay permeates all through the flesh of the bird, thereby causing sickness among the consumers. Their opponents say, no, your deductions are wrong, that the offensive odor so often complained of in fowls is caused by their being permitted to range in the barn yard and other places where they feed upon impure matter, such as the undigested parts of grain that have passed through animals. This point can be settled in a short time by confining the fowls intended for home consumption and feeding them only on pure food. I have frequently noticed this unpleasant odor in fowls while eating them, and in every instance were they fresh killed besides if one will notice, they will find a distinct difference between the odor of the fresh killed and one where decay of the bowels or entrails have begun, and I have also noticed this fact that the crops of the fresh killed fowl may show no signs of decay, yet the flesh is spoiled in certain parts by this offensive smell. The principal objection that I have to undrawn poultry is, that it will keep only for a short time, and this is a very important item when a large quantity is demanded for a city, and dealers are compelled to embrace a large space of country in order to get a supply for the consumers. I have know instances where both kinds have been packed in a barrel for days together, and on opening it the drawn was soured while the undrawn was in good condition. But I can see no good reason why the heads and feet might not be cut off, for the heads are always offensive after a few days confinement and spoil quicker than the crops, while the legs are of no use for any purpose. It is said that there is an exception to all rules, if so, in the one instance I would except the head of the cocks when caponized, and the legs on an old cock in order to detect them from the young one, and this would only protect the most ignorant among the consumers, for the more experienced, and dealers could select them without the feet.—*Cor.*

GROWING FOWLS.

It is seldom that a young fowl makes much growth after October begins. It may thicken in the body and become compact, but it will never be a very large bird; hence to those who may be patiently waiting for their late chicks to grow up to be large hens, we will say that it will be better to sell them, as they will amount to but little until spring. Pullets hatched early in the season need not necessarily be large to be good layers, as size has nothing to do with it, and it will be profitable to retain all that give promise of being useful, but the late chicks, that now are but half grown and show no indication of matings, are not worth keeping.

PRECAUTIONS FOR WINTER.

The fall is an excellent time to prevent winter diseases. Some poultrymen prefer to keep their hens in yards during the winter, in order to care for them with advantage, there being but little that the hens can secure when the snow is on the ground. If the hens are to go into winter quarters, with the quarters in a condition to breed disease the effect will be shown after winter appears. As a precaution against disease make a whole tub full of thin whitewash. Add to the whitewash half a pint of crude carbolic acid and the same of spirits of turpentine. Keep it well stirred, and sprinkle it well on the floor, walls, roof, in the nest boxes, over the yards, and even on the fences, and repeat the process once a month.

ROOSTING IN TREES.

It is a fact that there are some who are ready to defend the roosting of hens in trees, claiming that they have fewer losses of fowls, less sickness and more eggs. Such persons do not take into consideration the sacrifices they have made in order to reach the condition of the "survival of the fittest," at which stage only the best remain, and they would greatly improve if given some kind of protection. It may be that there are those who have crowded too many birds in a small, damp place, in which they could not thrive, and the exposure outside was better, but in either case an extreme was resorted to, and better care would have shown a great difference.

THE CAUSE OF THE CHICKS DYING.

L. J. WINDSOR, SUMMIT, R. I.

I would like to say, in reply to the article in the September number of the POULTRY KEEPER, by Mr. S. Judson, that I had just such an experience some years ago as he describes, excepting that I used hens for incubating purposes. It was about the time that I first made up my mind to go into the poultry business on a sufficiently large scale to make it my main business and try to "earn my bread" thereby, and had I made a success of it at that time I have no doubt that I should have been a good many dollars better off to-day than I am. I had just such luck as Mr. Judson describes.

I determined in the spring to raise 1,000 chicks by the "old hen method," in order to supply myself with about 500 pullets for layers, experience having taught me the unsatisfactory results of depending upon buying pullets for the purpose. Well, I began to hatch the chicks and make the coops as needed, and everything was arranged on what I now know to have been a good system, except one thing, but the chicks began to die, just as described. They looked well enough when hatched, but soon began to die, and in a few days whole flocks would be gone, with no apparent disease, but just quietly tip over and go to sleep, "the peaceful sleep of the just," as Mr. Judson describes. Every new flock that came off I would put in a different situation, thinking perhaps that would make a difference. I tried open meadows, orchard shade, garden, currant bushes and door yard, but all went the same, and I could see no reason for the trouble, so that, sick and disheartened, but not entirely discouraged, I found it necessary to "go a little slow" in the poultry business, and in the meantime to look in other directions for the "daily bread." Now I knew there must be some reason for the trouble, and the fact that I could not find out what the reason was was a constant source of annoyance to me for years afterwards.

The next year what few chicks I had grew all right, and so they did the next, but not until I could solve the problem of my previous failure did I think it prudent to venture into the poultry business again, as my sole occupation. Now for the cause: It may be that I was very foolish, and the editor will not see fit to publish so long an article, or what they may consider so trivial a matter, but I am perfectly convinced that the whole trouble was in the corn meal which formed a large part of their feed. I bought and used the store meal, city ground, which all the farmers hereabouts use for their cattle and horses, but which was wholly unfit for young chicks, on account of the quantity of mouldy corn which was ground in with the good, as is the custom in most places where meal is ground for the general market, some mills having as many as four spouts leading into the hopper, only one of which carries good corn. The year in which my chicks died was one when there was an uncommonly large amount of damaged corn in the country, and the farmers about here had not become awakened to the fact that there was so much difference in meal. As for myself I had never lived on a dairy farm, or where much stock was kept. I was young and had very little experience with poultry, but now, when I have many small chicks to feed, I always buy the corn and have it ground, even if I have to take it a long distance to mill, and if taken to mills where there are not conveniences for cooling properly it will need to be spread out pretty well to cool. I am aware that I have written a good deal to say a little, and Mr. Judson's trouble may not be the same as mine, but if this letter will save one person from feeding musty or mouldy feed to small chicks, and thereby prevent him from such loss and worry as I went through, my object will be accomplished.

LAYING PLANS FOR THE FUTURE.

H. L. WORDEN, FORT WAYNE, IND.

Enclosed you will find the addresses of several persons to whom I wish you would send a sample copy of POULTRY KEEPER. They are all interested in raising poultry, and I believe they will become subscribers, as I have almost got them talked into it now. I must say for myself that I have never had a paper put in my hands with which I have become so thoroughly infatuated as I have with the POULTRY KEEPER I have been a subscriber for about seven months, and in that time I have gained enough information to convince myself (and probably only myself) that I can run an extensive chicken farm. Previous to taking your paper I hardly knew a hen from a rooster, except by crowing, and if I was to hear a hen crow (I've heard of it) I believe I would have tried to mate it with a dozen roosters, and then talk about a "Monkey and a Parrot time."

Next week I am going to start in. I am going to build a coop eight by ten feet, with a yard fourteen by twenty, which I believe is large enough to accomodate one rooster and one dozen hens. I mean one dozen hens and one rooster (ladies always first). The entire cost of the hennery will not exceed $10 for lumber, lath, studding, etc. I will build it myself, and I believe it will be as warm in a severe winter as any coop in the country (for the money). It is to be ten foot long, eight foot wide, eight foot high in front and six foot high in back. You see I can utilize fourteen foot lumber all the way through. It will be made of matched lumber, planed on both sides ($18.00 per 1000). The studding will be two by four, which costs one cent per running foot. On the inside I propose to paste layer after layer of newspapers (not POULTRY KEEPERS, I'll warrant you), until I have about six or eight layers. Then I propose to give it a good coat of whitewash; then I will tack tarred paper all over, and then give it two coats of whitewash. I propose to keep clear of lice, which seems to be the worst feature in raising poultry. I am going to feed for eggs. I will feed meat and bone, some whole grain (not corn), sometimes oats, maybe wheat; sometimes a warm mash of chop feed, etc., in winter. They will get all the potato parings and cabbage leaves, and they will always have fresh water. I propose to keep the coop, roosts, etc., scrupulously clean. If any of my chickens get the roup, gapes, etc., I don't know now what I will do, but I will consult the POULTRY KEEPER, where I am sure to find out what to do, so I will be all right. My stock is to be Plymouth Rocks, Black Minorcas, or Leghorns. They will all be of one breed, however, at least until I get farther along in the business. I have lots of egg faith in the Leghorn, but she is too handy with her wings. I am much pleased with Plymouth Rocks, and will be perfectly satisfied if I have to have them, for they are a good "general purpose fowl." I am also stuck on the Black Minorcas. I believe they are good layers. This is my choice. I hope I am right; if I am not, I will find it out sooner or later. I am awfully green in the business, but I have become infatuated with it, and propose to begin slow and give it a fair trial. If I succeed you may enjoy the pleasure of being a promoter of that success, and if I fail I can blame no one but myself. Success to POULTRY KEEPER

THE BRONZE TURKEY.

MRS. A. E. S., COYNER'S SPRINGS, VA.

I have been a reader of the POULTRY KEEPER only a few months, and like it very much. Have taken pleasure in caring for poultry ever since I was large enough, and do not need anything to increase my interest in that line, but I am pleased to see, since reading your valuable little journal, that my husband, who, with many other farmers, has always pronounced poultry a nuisance, if not a care to the farm, is becoming more lenient to "Biddy," if not interested.

I acknowledge my thanks for your timely remedy for exterminating lice on turkeys. I believe it saved most of my flock, of which I think I am justly proud.

I would like to join in with Mr. R. W. Davidson in singing the praises of the Bronze turkey. I have a hen of that breed, which I believe (all told), will more than compete with any of his in the production of eggs. Have for some years been raising the common grey breed; never had one to lay over seventeen eggs in a season, if allowed to set. Last year I purchased a pair of thorough-bred Bronze, for which I paid three times as much as I received for mine. The hen began some time in April to lay, and layed an egg every day for twenty-eight days; she then set, hatched, and is still caring for her brood. When they were about three or four weeks old she commenced laying again. This time we gathered from her thirty-eight eggs, making a total of sixty-six eggs gathered, but in foraging for her young several times she was absent from home, and from her nest, from one to five days at a time, and as she never failed to lay every day when at home, it is reasonable to suppose that she layed when away from home, and I believe it quite safe to say she has not layed less than seventy-five eggs this season. I would advise all who contemplate raising turkeys next season, and have scrub stock, to get rid of them and procure a pair of the Bronze turkey breed. Just try them and see if they do not give satisfaction.

INSECT POWDER ON CHICKS.

C. A. SPARKS, TOPEKA, KAN.

I have just been reading Mr. O. P. Phillips on fat hens, and Miller Purvis on fat sitters, which Mr. Purvis speaks of a friend of his telling him of killing a lot of chicks in the shell by putting insect powder on the hen to kill the lice. I had some experience in this line this season, which was to the reverse. My chicks were free from lice on the heads of those that came from under the hens that had been powdered, and from those that had not been powered came chicks with lice on their heads. I could not see that it made any difference as to the number of chicks hatched from each setting of eggs. It might make a difference if the hens were allowed to run in the wet weeds and grass. My hens were in a dry yard, and could not get wet from the dew off of the weeds and grass. I would like Mr. Purvis to give the facts in the case mentioned. I have had quite a good deal of experience in the poultry business, and have been breeding fine poultry for seven years. I have been taking the POULTRY KEEPER about six months and like it as well, if not better, than any of the other papers that I take. For the price it cannot be excelled.

HATCHES THEM RIGHT ALONG.

D. A. FOLK, LEIPSIC, OHIO.

As the editor was so kind as to publish my short experience in the chicken business I will venture again. I am still learning every day. I am enjoying a quiet ride on the stream of success. Many dark clouds have rolled away and let in the sun-light on my enterprise. If you could only see my poultry yards now you would be pleased. A healthier lot of chickens never walked. Erect carriage, scarlet combs, and lively as crickets. I have learned what to feed in order to prevent cholera, lice, gapes, etc. My hatchers work so very nicely that every fertile egg will hatch. I am now busy building a fifty foot laying house; when completed it will have cost me $100. I shall divide it so as to make five pens. I am selling my chicks as fast as I can hatch, at five cents apiece. I have filled both machines, this 25th of August, so as to have a fry this fall and winter. I must buy another hatcher just to accommodate my neighbors, as I am overrun with eggs for hatching. Some of my neighbors have thrown their hatchers aside (poor machines had no brains), and expect me to hatch for them. (I'm getting there.) Get away trouble; everything looks bright to day, but to-morrow may bring a weasel. With all my trouble the pesky rat put in for his share. By using shot and steel traps I made short work of them. Next followed the weasel. I killed two by shooting a chick also. I had to build a room to teach my chickens to roost, as I have no old stock. Now when bed-time comes, they march in by the hundred and take their places like school boys. How dignified a Brown Leghorn rooster looks sitting by the side of a Light Brahma hen. I will soon grade and put them in winter quarters. I expect to commence running machines on full time December next. POULTRY KEEPER, we shall stay by you.

FEEDING THREE TIMES A DAY.

JAMES N. FITCH, YONKERS, N. Y.

You printed a letter of mine in a recent number, and added also: "Never feed at noon." I have fed at noon ever since I can remember having hens (of any description), and I always get just about twice as many eggs, on the average, as my neighbors, and they always ask me why. Last winter we only kept twenty hens; a next door neighbor kept forty. He had no eggs all winter, and I had an average of eight or ten a day. He fed corn morning, and night, and I fed wheat in the morning, hot scraps at noon, and corn or hot scraps at night. In winter I keep warm water in the troughs continually. Last week I got a roll of tar paper and papered my hen houses (two), inside and out, and on the roof I put a good heavy coat of tar, and will put on another about the first of January. Putting the paper inside will kill or drive out all lice, as they cannot stand the smell of the tar. I have turned all my large breeds over to the rest of the family for their own special use, and have retained a pen (nine birds) of fine Buff Cochin, or Pekin Bantams, from which I expect to raise some fine birds. I got them from a breeder in New Jersey, and did him a great injustice at the time as I doubted the purity of the birds. But they have grown to be beautiful specimens as he said they would. I think the Buff breeds are the handsomest there are. The family will only keep twenty-five Leghorns and Houdans for use during the winter. If I should stop feeding hot feed at noon I do not think the hens would lay half as well. I think I would have gotten more eggs last winter, only half a dozen or so of the hens being Houdans, and I have not done much in making them winter layers, although some will lay. I think I will make a trial of feeding twice a day just to see if the birds will lay as well, and will let you know the outcome in my next.

BEATS THE HENS.

TIMOTHY CROWLEY, FOTOKET, CONN.

When I asked your counsel about making an incubator last spring, I promised to let you know the result. First, let me thank you for your good advice in the matter, and also thank you for the plans, which you sent me. I made a hot water incubator from your plans, a complete POULTRY KEEPER incubator, without varying it a single particle, and I think it is just the thing to aid a man in successfully hatching a number of chickens. I had never seen an incubator in my life before, as they are very scarce around here. I got the idea from reading back numbers of the POULTRY KEEPER, particularly the July, 1887, number and thought I would try now for results.

On April 6th I started with 100 eggs, and on the 23d and 24th days we had forty-five not very promising chickens, a poor recommend to artificial incubation, but it was due to an incorrect thermometer, being about four degrees too high. I got another and tested it under a hatching hen's wing, found it about right, so we started again on the 7th of May, with 100 eggs. Result, eighty chickens on the twentieth day, one being weak; it died about one hour after putting it in the brooder, leaving me seventy-nine as strong and hardy as any chickens we ever raised. At the present writing they are about two months old and still prospering.

The third hatch we started on the 24th of June, 100 eggs, and on the twentieth day we were visited by eighty-four chickens, four sprawlers and two weak ones. The weak ones died, and I also disposed of the sprawlers, which leaves me seventy-eight little downy balls that are not at all tired of living. They are now about two weeks old.

I did not test the eggs during any of the above hatches. After each I made an examination. In the first I found only three fertile eggs, all the rest had chickens in some stage of formation. The second had seven infertile, and the third twelve. My wife says that the old hen's duty is to lay eggs on this farm in the future, and I second the motion. I think I have done well, and I attribute my success to the POULTRY KEEPER and you.

THE LIFE OF THE POULTRY RAISERS.

HARON J. FELTHOUSE, MONGO, IND.

I have been a reader of your POULTRY KEEPER for nearly two years, and as I have never written anything for the paper I will try to say a few words in behalf of the poultry raiser.

This is one of the most pleasant occupations in life. What is more pleasant than to make a visit to some grand poultry farm, where all varieties are bred in their purity? The man engaged in this occupation is generally happy, looking after his fowls, seeing that each breed is kept to itself, and that the little ones are not run over by the larger ones. He passes his flock of Light Brahmas with admiration. He loves their peaceable disposition and large size. He keeps the White Crested Black Polish for their beauty, the Games for their majestic appearance, and the Hamburgs and Leghorns for their activity and egg production. How amusing it is to watch a happy family of young chickens "gathering home in the evening around the family hearth," and seem to talk over the day's labor, how some may say they caught a bug, a cricket, a grasshopper, or saw a snake, or smelled a skunk.

The man who has all pure bred fowls generally calls his wife by loving names, and his children are happy too. But is it any wonder there are so many cross men and women, when we see so many dung-hill fowls around their places? The man who keeps this class of fowls does not call his wife by tender names, and he receives no profit from them. If they lay at all they lay in the woodpile, in the barn, or on the straw stack. If he only raises a few chickens he condemns the business and says it don't pay. If a chicken happens to get into the garden, where a pick may be off, he runs and yells and throws stones and clubs at the poor fowl; and if he happens to kill her in his passion he turns cannibal and eats her. His wife takes the eggs to town and sells them, and with the money buys him a nice hat or gloves, or something he may be in need of—and he clubs the hens for hunting their living in his garden.

A man who does not like fowls, and take care of them, is not safe for a young lady to wed. In conclusion, I wish to cheer up our poultry raisers, and do not always look on the dark side of life's pathway. Give your boy a chance to care for fowls; teach him to love and care for them—and when he grows up he will call you blessed. There is always room at the top of the ladder; let us all try and improve our flocks, read the good POULTRY KEEPER, and give our editor encouragement.

PAID THE FIRST YEAR.

D. A. HORN, HILDRETH, ILL.

I received my September number of your invaluable paper last evening, and, as usual, found it full of valuable information. I will give my experience in poultry.

Last January I purchased fifteen Light Brahma hens (one-half breed), and six Plymouth Rocks (half breed). I also purchased a trio of Silver Wyandottes and a trio of Indian Games. I paid $7.00 for the Wyandottes and $13.00 for the Games, making $20; and $7.00 for Plymouth Rocks, making a total of $27 outlay, with $4.00 express charges added, making $31 in all. From the Wyandottes I have raised eighty-seven fine chickens, without the loss of a single chick. I have raised forty-five Indian Games, with the loss of five chicks from the large head lice. Have raised 120 half breed Indian Games and Light Brahmas, with a loss of eight from lice. I had 200 chicks as large as quail before I lost a single chick. After the weather got very warm I became careless, and let some of them get lousy. Have sold $25 worth of my Wyandottes and Indian Games, which is $2.00 more than my outlay. Have only sold ten Indian Games and fifteen Wyandottes, which leaves me seventy-two Wyandottes, thirty-five Indian Games, and 120 half breeds. We have sold eggs amounting to a little more than the price of the feed they have eaten. I feed my little chicks boiled eggs and crackers, alternately with rolled oats until ten days old, then I feed a mixture of corn meal, with equal parts of ground wheat, scalded with sweet milk, until they are old enough to eat wheat, oats and corn. I also, occasionally, since the grass has become dead (in consequence of dry weather), feed them a few cabbages. I have raised a half acre of sun flowers, and feed them a few at a time

twice a week. I live in a small village, have but two lots, hence I think as it is the first experience I have had with chickens I have done pretty well, but "Render unto Cæsar the things that are Cæsar's," as I attribute all my success to the POULTRY KEEPER, for I have learned all I know about chickens from it. While I have several good ideas from contributions to the journal I must confess that I got the most of my ideas from the editor, who, by the way, I think is one of the most common sense, practical editors I ever read after. I have noticed in every case where parties have taken issue with him they have, in my judgment, gotten the worst of it.

Please let me add that I keep ground bone and oyster shells before my chickens all the time, and feed meal to the little chickens.

AN OHIO MAN'S EXPERIENCE.

SAMUEL WALTON, BARNESVILLE, OHIO.

I feed my hens dry bran in the morning, wheat at night (and occasionally ground bone), and under that treatment White Leghorns have become broody. I fed them heavier until late in spring. I have one hen that has been sitting for two weeks. The chicks from four hens, with Plymouth Rock cock, are pure white; and grow faster than any other. I had poor success with my last hatch in the incubator. I got about forty-five fit to put in the brooder out of 140 eggs, the most of which appeared fertile, but died at different stages, mostly when nearly full grown. I put them in a Harper brooder with a run, in a wash house, and I thought I never saw chicks grow faster or seem more lively for a week and a half than they. Then the weather being very hot, they began to seem droopy all at once. I put them in a brooder (Bishop) out doors, but they died gradually, and frequently were trampled to death. But I have twenty-five left that seem lively, and likely to do well. I want to know if chicks can be raised to be healthy in a building, if properly fed, or must they get to the ground to be healthy? I neglected to feed them green food. I could detect no lice; the brooder was new this spring and no chance to get lice started in it, as it was separate from other chickens. I have had no bowel complaint with any this summer as I could see, I set two hens with thirteen eggs each, and hatched nineteen. I have three setting now. I want to do better with my incubator if possible, another season. Having only forty-eight feet of southern exposure, I have not room to build scratching sheds. How will it do to lift the glass windows on pleasant afternoons and keep six inches of straw on the floors of my chicken houses, making scratching sheds of them. I have 12x8 feet at either end of my present row of hen-houses, and I want to put up additional buildings in those spaces. Would thou advise two-story building with scratching shed in basement, and roosting room above, or one story like my others?

The hens should be on the ground during the day, but an upper story may be used for roosting. Chicks can be raised in an upper story if it is kept covered with earth and cut straw provided for scratching. The windows may be raised on warm days, but something depends on the direction of the wind.—ED.

GOOD HATCHES BUT HARD TO RAISE.

F. W. T., AQUASCO, MD.

Please excuse a novice for airing his experience in the attack of "hen fever" he is undergoing.

I have had symptoms of the complaint for years, but these rapidly developed last winter until they reached the "incubator stage," and then I prescribed for myself an application to you for plans of a home-made machine as a remedy. These plans duly arrived, and I set to work and made a machine by them to accommodate about 104 eggs. This checked the startling symptoms, to some extent, until the 19th day of the trial hatch, when symptoms became extremely violent, caused by the sight of a "pipped" shell in the drawer. However, I didn't quite lose my head, for a wonder, for just at that time I took a strong dose of your advise, in a little book called "Incubators and Brooders," "not to have a spasm" when the first chick made his appearance. My wife, or friends, or neighbors, had long given me up as a case past all hope of recovery, but when they saw the little downy fellows come out of the drawer, and in due course begin to eat and drink, like any orthodox chicks, they began to think there was "method in my madness."

The percentage of the hatch was not very high (about twenty per cent), but it proved that a chick could actually be brought into this "vale of tears" without the old hen. Well, I prescribed, as another palliative, a full "setting," this time, with the result of about sixty-five per cent. hatch, which increased the symptoms of the complaint to such an alarming degree that a "real, scientific incubator" was my next prescription. Pocket being so shallow I could not get that remedy at once, but by hook and crook I scraped the necessary ingredients together and eventually obtained the prescribed remedy, which allayed these terrible symptoms somewhat.

In the first stage of complaint I had made a brooder after my own ideas, and it works well. I still have the "fever" badly, and expect I shall have to prescribe another incubator before all danger is passed. And now, leaving the "fever" theory, let me come down to actual facts, and give my little experience on the matter of ventilation in the machine I made myself. I made two ventilators under the egg drawer with tin pipes, one inch in diameter, and covered with perforated caps. The first and second hatches were made in cold weather, with tight caps on ventilators; the sixty-five per cent hatch was run pretty evenly, only twice getting to extremes for a short time. Weather much warmer for hatch No. 3, but did not alter ventilators; result twenty-two per cent. Hatch No. 4, weather hot at times, so put on perforated caps with result of eighteen per cent. In each case the eggs started all right for the first week, but just smothered out, I thought, so for the fifth hatch I opened the ventilators altogether, and the average for that and two succeeding hatches was from sixty-two to sixty-eight per cent. There were moisture pans among the egg for the last week in each case. Conclusion arrived at is, that good ventilation is absolutely necessary and I am going to keep to that conclusion.

Now as to my experience with "real, scientific machine," got from one of the POULTRY KEEPER'S advertisers (whom I found a square and obliging man), together with two of his brooders, which are No. 1. It has a slanting ventilator tube under each tray, close under tank, likewise permanent, which, I take it, allows the heated (at hatching time) and vitiated air to escape, thus causing good circulation. Anyhow, with the seventy per cent. and over hatches I have had with it, the chicks are nice, clean and strong.

It has moisture pans under the trays. The maker's directions are: "Fill pans at commencement of hatch and see that they do not dry out during the time," and I followed these directions blindly with above results, and at present I shall not alter the method. Of course I had a good many dead in the shells, but I accept that as one of the contingencies, and go along until I see some way of arriving at those "ninety-five per cent. and one hundred per cent. hatches" plainly demonstrated. My opinion is that moisture has not so much to do with "dead in shell" as ventilation has, but, let me tell you, I do not consider myself an authority.

But now, Mr. Editor, about those self-same chicks at various ages: For about two weeks they do nicely, then a few drop off—the weaker ones—go on again for about a month, and then they begin to go in earnest. Their heads begin to shrink up, leaving the bills very similar to crows; the wings droop; they refuse to eat; drink all the time and die, looking about as pitiable objects as were ever seen. "Lice," you say, upon reading this, but we fight lice from the start, and although we occasionally find the large gray wretches on the heads of hen-hatched chicks, we do not find them on the incubator chicks. As to food, we give them a complete bone and meat food, in appropriate portion three times a week; meal and bran, or middlings; scorched wheat, onions chopped and milk to drink, besides fresh water three times a day. At a month old we give them their liberty, and they just live in my large garden and a clover lot adjoining. Well, the survivers at six weeks go along nicely for about six weeks longer, and then they go off again with exactly the same symptoms. White heads, awful beaks, drooping around, drinking all the time and die. I have opened many, and the heart is in each case shrivelled up and coated with a nasty sticky substance, and has the tip quite white; liver is very dark. Pullets are worse than roosters, and I have lost nearly all I turned out for winter layers. Have white-washed houses with carbolic acid and kerosene oil in the wash; painted roosts with oil and carbolic acid; scattered acid about on the floor; kept latter fairly clean, and yet my neighbors, who use no acid, feed nothing but meal and corn, don't trouble about lice, and rarely, if ever, clean their houses more than twice through the summer, and raise nearly every chick to market or eating size, while I have lost fully forty per cent. of my chicks, naturally or artificially hatched. Can you or any of the breeders of POULTRY KEEPER give me advise as to a remedy for the trouble? Have not lost a dozen with gapes during the season, but over 300 from above trouble.

I hope the editor will excuse this (perhaps wearing) epistle, but the POULTRY KEEPER seems to welcome all visitors, and so I hope you will be able to help me among others. My opinion is, that a more live and practical paper in this line does not exist on earth, for its appearance each month is to me like a visit to a club meeting, where I can do better than sit and listen and forget two-thirds of hard facts, for I can ask a question a dozen times, if I wish, in my own mind, and read the answer over and over until I know it and understand clearly.

[Giving the chicks their liberty at a month old is too soon. The hen does not wean her chicks so early.—ED.]

GIVES ALL THE DETAILS.

C. C. HARTMAN, TIFFIN, OHIO.

I attended the Poultry Show in this city last February, 1893. It was interesting; I attended it again, trying to buy some Plymouth Rocks, but could not buy satisfactorily, and went home disappointed. Attended the next evening, still not satisfactory to buy, so did not buy at the show. I picked up a sample POULTRY KEEPER at the door as I was departing; took it along, looked over it carefully, looked up the ads., wrote to several Plymouth Rock breeders, received catalogues and prices, and finally decided to buy from a well-known breeder, a trio. I received them O. K. After having them for a few days I wrote to the POULTRY KEEPER for a sample paper, which I received in good time, looked it over carefully, and thought it worth your subscription price, so sent in my subscription for the following year, and think it worth renewing for years. I received three Plymouth Rock hens of another breeder. With this cockerel, pullet, and four hens, we started.

Now here is where the POULTRY KEEPER came in the game. I read very carefully how to feed for eggs, and follow instructions as near as possible. In a few days I was surprised to see the eggs coming so soon after the birds had been shipped so long a distance, and in a few days I had a sitting of eggs, and twenty-one days after setting we had twelve as nice little chicks as could be seen. At this time all the hens and pullets were laying, so I set them just as fast as I could get the hens, which seemed to be slow as the eggs were coming so fast. I kept reading and studying the POULTRY KEEPER, and made a box just large enough one way to stand the eggs on, and had the pasteboard partition made out of an egg crate, which I fitted in this box so I could turn the box over with the eggs in it. I turned the eggs simply by turning the box; turned them every day until they were set under a hen.

Now, as I live in the city limits, I had to put up a yard run for the chicks, which was made of 2-4 posts, six feet high and six feet apart, with a twelve inch board at the bottom, and a six-inch board at the top. On this we nailed the wire netting, five feet wide, so it made a pen just six feet high. The wire was put on the south, and on the east end of the yard and north side and west end were made with a tight board fence, six feet high. The yard was twelve by sixty feet, and was built over a grass plot, which made a very nice yard for them. In this I placed my broods and small brood hens, kept the hen in the pen, and let the chicks have full sway to the yard in which they were doing very nicely by being fed according to the POULTRY KEEPER. I put all my broods in this yard until the large ones began picking the small ones, and then put in partitions to separate them, making each yard twelve by twenty feet.

About July first I saw some of the older chicks were getting too large to roost in the small pens, so there was a hen-house to be built for the young stock coming on, and it was built as follows: The base is ten and one-half by twelve feet. I set it up just fifteen inches from the ground, on four posts, six by eight feet, one at each corner. This house is nine feet high in front (south), and six feet at the rear; built of barn siding, and two by four studs, with an iron roof, and a large six by twelve feet sash with fourteen glass, sixteen by twenty-six inches, and a three by three feet sash, just above the large one, on a slide, so it can be opened or closed, just as is necessary. This house is built at one end of the twelve by sixty feet yard mentioned above; the house being fifteen inches above the ground, with the wire netting all around except the end to the yard, which is entirely open. This gives the hens ample room to go under in case the weather is rainy or blustery; also for shade, cool and always being dry.

The house has a board floor in it, with a twelve inch board four feet from either side, loose, so it can be raised on any occasion to see or get anything from under the house. I have two, both two by four feet boards for roosts, full length of the house, twelve feet, fifteen inches apart, with the corners rounded. To separate the roosting department from the scratching department, I have an eight in board, edge-wise upright, full length of the house, and twelve feet. On top of this I have a board twelve inches wide and ten feet long, nailed on top of the eight inch board, broad side down, on which I have seven drawers, eighteen by twenty-two inches, eight inches deep, which slide on the twelve inches board, and over the drawers, or nests. I have another board twelve inches wide, edgewise upright, to darken the nests, or keep the light from the hens while on the nests as they like a dark nest best. About three inches above the edge of this board I have a light wire or two to keep the hens from roosting on it. I think this makes a very comfortable house for the pullets which I now have in it, forty one in number and the cockerels I have in the old house, six by eight feet, with a yard eight by thirty feet, all made of barn siding. There are twenty-one cockerels in this house and yard.

We have now 143 chicks from those four hens, and one pullet and cockerel, and nine chicks which we got from a setting of eggs received from a well-known Plymouth Rock breeder, in order to get cockerels for breeding next spring, and we must give this breeder our thanks, as we have received from that setting of eggs four as nice cockerels as I have ever seen, ten weeks old, and they are beauties. We have in all 152 chicks from two days old to eighteen weeks. The chicks eighteen weeks old are very nice in plumage and weigh from three and three quarter pounds to four and one-quarter pounds, which I think is very good weight for eighteen weeks chicks of the Plymouth Rock breed. I think we will have some very nice pullets and cockerels, as we bought high-priced stock from which to breed. We will close breeding now as we have not room enough to keep what we have; must sell some of them off; have too many to keep. We are building another house and yard now; house eight by ten feet; yard, twelve by fifty feet, which we will use for a breeding house and yard.

I read the POULTRY KEEPER monthly and only wish I could read it weekly. I take another paper, but prefer the POULTRY KEEPER to any other that I have seen. It is interesting to any one who has any idea of keeping or feeding a single hen. Now I think the POULTRY KEEPER is just in it, telling us what to do for our poultry in the cold weather that is close at hand. Here you can see what I have already done for the cold weather that is now approaching. First, I gathered red clover, cut it up fine, and dried it; also about five bushels of it dry, to feed in the morning mash. After the clover was gathered I had the ground ploughed, put it out in oats, which was a nice green food for my chicks until it ripened; then I cut it and put it away in a dry place with about 500 pounds of clover-hay, to cut up and put in the scratching place. In winter the oats will be added, and a little now and then to the scratching place also. I have gathered about two bushels of clam shells to grind for grit, and a store box full of gravel also ready; two barrels of road dust are gathered and put in a dry place. We have bought a mill for grinding shells and grain. We also have a silo filled and under weight (a coffee barrel) the contents being as follows: cut green corn, blue grass clover, cut cabbage, beet and radish tops, all cut fine, and pressed in this barrel with about 200 pound weight on it. I expect to gather some leaves when they fall, for the scratching place. We have two town lots out in wheat and rye, for late fall and early spring greens for the hens. I have done all of this work myself while out of the store before breakfast and after supper, and any person who thinks of raising a few fancy chickens for pleasure must work hard for that pleasure at the same time or they will not succeed in it.

We have not had any sickness in our flocks to amount to anything after the chicks reached the age of five days. We lost very few—not more than six or eight. I think keeping houses and runs clean is the best cure for all sicknesses in fowls. I never have any feed lying around from one meal to another. If they do not eat it all up I clean it up and feed all in troughs, large and small; give fresh water three times daily, and clean out the houses every day without fail. I feed all the scraps I can get from my butcher twice a week, and have a nice flock to feed and take care of. Some people tell me I am chicken crazy, but those same people can hatch but five or six chicks from a setting of eggs and raise about half of them. We get from ten to thirteen from every setting and raise nearly all of them, and I think I will make them sick when I show them my egg basket this winter and spring coming. Our hens have layed extremely well since March 15th, and the pullets layed on an average of twenty-four eggs monthly since March 20th, 1893; was broody about three days and went to laying at once. She is now moulting and laying every day. I think she is a daisy. We feed them a mash in the morning, of oats, something green, table scraps, bran put in meat, and bone. Cut this all and mix it up with rain water, warm in cool weather and and cool water in warm weather. We feed the chicks a grain mash in the morning, all ground, corn, oats and wheat at noon, ground, and same at night, except the older ones, to which we give whole grain at night.

You must excuse me for writing so much, but I am one of those fellows who believe in doing to-day's work to-day and be ready for to-morrow, but I would like to know what the editor thinks of the start for success, and when there is a column in the POULTRY KEEPER blank you may fill with this letter if you choose. I have nothing to blame for our good luck but the POULTRY KEEPER, for without it we would probably have raised chicks like our neighbors did, about two or three chicks from fifteen eggs, and I would like people who raise poultry of any kind, to look, read, and be convinced that they cannot get along without it.

[The letter is full of details, and we believe it will be of great service to many of them.—ED.]

EFFECTS ON THE OFFSPRING.

If a bird has a frozen comb will his progeny be effected in any manner? This is an inquiry by Mr. W. J. Sutton, Beaver City, Neb., as follows:

"Will the progeny of a cock that has a comb frozen off be affected in any manner in the markings of the comb provided the parent was well marked at the time of injury by frost?"

The freezing of the comb does not detract from the merits of the bird as a breeder. The loss of a member of the body is not visited upon the offspring. The cutting off of an arm from a human being, or removing the tail of a dog, has not effect on the progeny, though it is claimed that a continuance of such would show its influence in a long list of generations.

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Good for a Beginning.—I came across the August number of your excellent paper and like it so much that I intend to send in my subscription. I am not very deep in "chickenology" yet, but I have five pullets and two roosters from a setting of White Leghorn eggs that I put under my three barn-yard hens this spring; four other eggs hatched but they were not White Leghorn, they may be Brown. I am becoming fascinated and expect to have more chickens, and possible a chicken, or rather an "egg ranch," if I have success in managing them. —*C. D. Coffin, Oakland, Cal.*

Has 200 Hens.—I receive the POULTRY KEEPER regularly. I look forward with much interest for the paper every month. I have a poultry house 75x10 feet, and I have about 200 hens and chickens and about twenty ducks. I got a setting of Rose-Comb Black Minorca eggs, of Nortbrop's strain, hatched six chicks and lost two of them. I keep one coop of White Wyandottes which I like very much.—*Subscriber, Newburgh, N. Y.*

Feeding Meat.—Our experience with feeding meat to chicks confirms the method of Mr. Kinney, published by you in the current POULTRY KEEPER. Three years ago we raised thirty-two chicks in a brooder, and until they were three weeks old they got no feed except raw meat run through a sausage machine. They were fed all they would eat four times daily. We lost none of them and do not remember to have raised a more thrifty lot of chicks. We now feed about half of the chicks' ration of raw meat and we raise about ninety per cent. of the chicks we hatch. We do not find it necessary to cook the meat as we have tried both cooked and uncooked meat. —*C. D. Stuart, Mountain View, Cal.*

Must Eggs Rest?—In the August number of the POULTRY KEEPER the editor comments on the above subject in reply to the query of a reader, and the statement is made that "There is no vacum in the egg and the contents cannot shake." Certainly this seems to me to be a long-drawn conclusion, but perhaps it is correct. I once received a setting of White Leghorn eggs from a prominent breeder, and in taking them from the basket, and before unwrapping the paper from the eggs, I heard them "rattle." I examined all of them when unwrapped and found more than half of them to be "loose" inside. My first impulse was to write the breeder that he had sent me *rotten eggs*, but I concluded to set them right away (I did not "let them rest") and somewhat to my surprise I received a good hatch I have found that the contents of an egg *will* shake sometimes without the two parts mixing, and when that is the case, I believe they will hatch if well fertilized.—*O. P. Phillips, Amo, Ind.*

Packing Houses for Poultry.—There are no market poultry farms around here where they make a business of raising eggs. Breeders go around among the farmers and buy from twelve to 100 from each, bring them to market and sell them. The farmers also take them to the nearest towns and exchange them for groceries or cash, but the cash is always so little that the farmers get nothing. Poultry and commission men buy them up and ship them to North Carolina, Chicago and St. Louis. We have a packing house that buys all the poultry it can get, kills and puts the poultry in cold storage. When spring comes, the packing houses have spring chicken We have a better show with them so sell them our poultry, but, like the cattle business, packing houses make the prices and also make the profit, the poultry raiser receiving very little. I have tried to tell you a little about the poultry business in Kansas City as I have been informed by the men at the poultry stalls at market.—*H. A. Jeffreys, Kansas City, Mo.*

Hot-Water Incubator.—I wish to keep about 100 hens. I also wish to let you know that I built a hot-water incubator after the POULTRY KEEPER plans, and I have had splendid luck with it. I can get from sixty-five to ninety-five per cent. of fertile eggs. All I know about poultry I have learned from the POULTRY KEEPER, and I would not know what to do without it.—*Milo B. Seccomb, Auburn, N. Y.*

Broody Hens.—Mr. Kinney is right with broody hens. I have done the same for years; pen them without food, but give them water. I do not remove hens out of regular coop, as they would fight upon returning to them. I write this more particularly to say that I once put a hen in a barrel, water in bottom, and slat for her head to drink outside. She was forgotten for twenty-one days. We found her alive but very thin in flesh; she lived and did very well.—*Ida Hunter, Girard, Pa.*

Persian Insect Powder for Gapes.—I had some chicks that had the gapes and I tried several remedies but none seemed to cure. At last I thought of the remedy which I saw in the July number of the POULTRY KEEPER. I got some of the Persian Insect Powder and a little blow-bellows, and blew several doses down the wind-pipe and in two days the gapes were gone, so I think it is a sure remedy for gapes.—*I. Rader, Easton, Pa.*

Good Hatching.—I made an incubator by the POULTRY KEEPER plans, to hold 100 eggs. I put in fifty-eight eggs for the first time, and on the 21st day I took out thirty-three good, strong chicks, which, I think, is a good hatch for a beginner.—*John Middenday, Louisville, Ky.*

Remedy for Crop-Bound.—Pour water into the crop, work crop with the hand until soft, then gently take the bird, hold its head down and swing it. This will throw the extra food out and wash the crop.—*M. Hodgrow, Elyria, Colo.*

The Brooder.—I have taken your paper from the second volume, all bound, have all of your books and tried to find out for myself, but I am unable to find just what I want. I have three different kinds and I am not able to spend any more. They are patent brooders but I think the one who got them up never saw a little chick. They are high-priced boxes. You were asked, a few months ago, why they put pipe in the centre like the Barney brooder, and if it was not better to have four pipes in corner. I think you must not have bottom heat. If too much, there will be leg weakness. It made me smile when I read your answer. You did not say yes or no. You have advertisements of both kinds in your paper and would be stepping on some one's toes if you did. Robt. A. Colt said yesterday, "Write Bro. Jacobs your troubles." Some will say you will have to have moisture in hot air, others say the pan is the best. The Barney Brooder has moisture pans. His price for same is $35. I raised about 100 chicks, for I like it. I saw your paper a few years ago, became interested in it and shall continue to take it if I never raise a chick. It tells me how and what to do. No free puffs.—*H. C. Luther, Pittsfield, Mass.* [We have never used Mr. Barney's brooder, and cannot give any information in regard to it. Mr. Barney is an experienced poultryman, however.—ED.]

Incubator Experience.—My son bought fifteen White Plymouth Rock eggs, which I set under a small White Leghorn hen recently, and, as a result, had fourteen healthy chicks. That beats the incubator. Those of my last hatch that survived are growing well, and still roost in a brooder out of doors, where they can run in and out at pleasure, having free range. I have repeatedly had hens break and dirty their eggs. I washed them off in warm water, had them soaking in a basin, and still they hatched, some, if not all, of those eggs Of those hatched in my hot water incubator the first were the best. I had the ventilator hole stopped with a corn-cob until the last week, and used a small sponge the second week, and two sponges the third. I want to do better next season with my incubator. To average under half is too much waste of eggs.—*Samuel Walton, Barnesville, Ohio*

Will Strike Higher.—I have started on a small scale, and propose to start on a large scale next summer. I do not think I will try incubation, but I am going to try and make it pay on the old style.—*E R. Koche, Denver, Colo.*

Uses Hydro-Safety Lamp.—I am more than pleased with your paper, and owe my little success to it alone. I made an incubator from POULTRY KEEPER plan, with Hydro safety lamp attached, and it works splendidly. Will give you particulars another time.—*B. Canterbury, Higginsville, Mo.*

A Curious Cross.—I had a chick hatched which had a guinea hen for a mother, and a Plymouth Rock rooster for its father.—*C. Blackburn, Lamont, Mo.*

Nest Eggs in Winter.—For the benefit of inquirers in the POULTRY KEEPER about nest eggs being too cold in winter, I will state that I have not used any for three years, and I think them useless, as the hens will go on the nests as readily as when I used them.—*Wm. Taylor Kansas City, Mo.*

A LUMP ON THE JAW.

It is not uncommon for a lump to appear on the face and gradually enlarge, and such sometimes appear on other portions of the body also. A subscriber at Alexander, Manitoba, Canada, recites the case of a turkey. He says:

"In March of this year I purchased a bronze gobler, and when it arrived he had a swelling the size of a small bean near his beak on right side of head. I have done nothing to it, thinking it would go away. It is now the size of a large Windsor bean of flesh color, and it begins to effect the eye. He is one year old, a fine bird and would not like to loose him. Can you tell me through the lines of your ever-looked-for POULTRY KEEPER what I can do for it?"

It is probable that the bird at some time had the roup, from which it recovered, and the tumor is the result, a scrofulous nature being at the foundation. To cut the tumor out might destroy the bird, and we doubt if there is any remedy, the disease really being in the blood. If the bird appears healthy otherwise the best thing to do is to not touch it, as it may not injure him to prevent using him in the spring.

LANE'S "CONTINUOUS" SITTING BOX.

This sitting box, the design of Mr. W. N. Lane, of Glenn Dale, Md., was formerly registered in England, where Mr. Lane was born and lived before he came among us to live, and he has kindly allowed us to place it before our readers. This sitting box is best described by Mr. Lane, who states that it will be found extremely useful by those who set many hens, and who recognize the necessity of having them under immediate supervision, instead of in so many small runs, when the labor and cost of providing for their requirements and attending to them daily become a large item of expenditure. In hatching fowls, ducks, or turkeys' eggs, the best average results are obtained by this system.

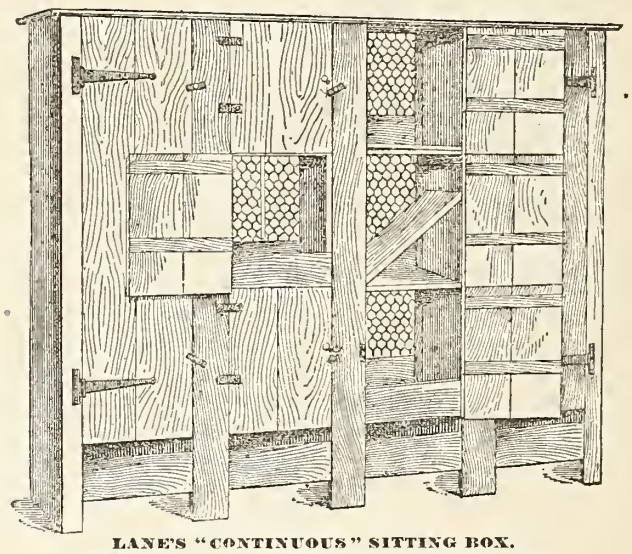
Each nest has a deep tray to receive moist earth, etc., and in that respect is made equal to being placed on the floor. The further advantages of this sitting box are briefly as follows:

1. A great saving of material and, therefore, outlay is effected.
2. The hens are taken off and replaced with great ease; in fact, there is a great saving of labor.
3. The hens have ample light without being able to see the attendant or passing objects. This is very important, as sitting hens are apt to jump off their eggs if they see the attendant at feeding time, breakages being the consequence. Again, hens are too frequently shut in over dark nests. By this plan they can see if they are covering all their eggs, and can turn them better and with less liability to break them.
4 The ample ventilation the wire netting affords tends to preserve the health of the hens.
5. The hens appear to thoroughly enjoy their nests, sitting as steadily and persistently as could be desired.

Several of these boxes may be ranged around the walls of a fairly light apartment, and each set of hens can be attended to in rotation, or in any way preferred. A good plan is to have the floor covered with sifted earth, or, better sand. Sixteen or twenty hens are then taken off and allowed to dust themselves. Droppings must be instantly removed. Green food, corn and water are then supplied, the hens replaced and the next batch attended to. Fighting soon ends, and can be prevented from resulting in harm. The hens recognize each other by the second day. They are very easily caught; indeed, many will walk up to be replaced on their eggs Frequently a very wild hen speedily makes one of the tamest and best sitters and mothers. If put on dummy eggs for a few days, and offered a little bread or other tit-bit by lamp-light, and gently stroked, their confidence is soon gained. A clucking hen close by appears to reassure them too.

The back of the box is set about twelve inches from the wall, which should be whitewashed. The cross divisions lift out. When in place they rest on cleats, which brace the vertical divisions. There is also a movable piece of wood in front of each nest, which is held in place by the narrow panel between the doors, and a small strip fixed on the upright divisions. The bottom of nests lift out.

Mr. Lane is the author of a small book entitled "The Basis of Poultry Farming," being a treatise on the practical management of fowls, which is full of valuable information.



LANE'S "CONTINUOUS" SITTING BOX.
Designed by Mr. W. N. Lane, Glenn Dale, Maryland.

GETS INTO THE CORN TRAP.

The *American Fancier* has gotten into the old rut of defending corn. It stands forth ready to battle for corn as poultry food, and proceeds to pound the life out of an imaginary opponent of corn. Whenever we notice some one battling for corn we usually watch to find where he will land, and he usually lands *outside* of the corn bin among *bones*. Then our good friend, Mr. Riggs, of Texas, tells how his hens, on the *range*, would not even eat corn when it was before them (thus demonstrating that even the hens rejected it as an *exclusive* food), and be proceeded also to state that his sitting hens are *poor*.

For the benefit of the gentlemen we will make our position clear, and any back number of the paper will show where we have always stood:

First. We have condemned corn as an *exclusive* food. Can anyone object?

Second. We claim that it is *fattening*. Does anyone deny it?

Third. We claim that it is not conducive to laying for a hen to be fat. Will some one object?

Fourth. We assert that *when* a hen becomes fat she *usually* sits. We have not made an imperative rule to fit *every individual* hen. That is our position, and *always has been*.

The journal referred to wound up its corn article by an eulogy on the bone mill All such advocates do so. If corn is the great panacea for eggs why have bone mills?

Corn and *bone*—good feed. So say we all.

WORMS OR CHOLERA.

The following letter from Trezevant, Tenn., shows how quickly a flock may be swept away. There is no reason for such a misfortune, according to the letter, and yet it is one of those "trials" which may happen at any time. The writer says:

I write for a small amount of information I have a small flock of fowls that have been in the best of health up to yesterday morning. When going out to feed them I found four old hens in a manner dead. They seem to be affected in their hips, as well as in many other ways. First, they get sick in five minutes, and in twenty-five or thirty minutes their bowels seems to get very painful and in five minutes more they begin to pour off a kind of watery substance, with a greenish color, and then it is they seem to get so weak in their legs or hips that they cannot walk. I killed the first one that got sick, and cut into the crop or craw, and found that they were full of common peas and five or six dozen worms, or something of the kind. They were about three-fourths of an inch long and white, but seemed to be dead. I gave the chickens water, with one pound of copperas, and carbolic acid one ounce in one gallon of water, then take one tablespoonful of that to one gallon of drinking water. This is all I have done for them. I had thirteen in all sick yesterday. This morning I killed the thirteen, and burned them. Can you give me some idea of what their ailings are. They are in fine condition, and about three-fourths of them are fat. I feed them on meal once per day, cold bread and meat scraps in the evening. They have five acres of ground to run on, plenty of good water to drink, and grass. Every place about the house, yard, etc., are clean, and are kept so all the time.

We are not sure that the cause was cholera, yet some of the symptons point that way. We are sure, however, that they have been overfed, as birds on the range need no food, especially twice a day. The worms may be possible from a dozen causes. We do not approve of the copperas and carbolic acid, as such are poisons. The males should be removed from the flock and the hens put on a strict starvation diet for a week, the only food being a pound of lean meat to twenty-five hens once a day.

MR. MUNGER'S BRONZE TURKEYS.

"Miss Columbia," the Bronze turkey hen illustrated, and owned by Mr. Frank M. Munger, De Kalb, Illinois, weighed twenty-four pounds when only nine months old, and her mate, "Columbus," reached thirty-four pounds at nine months, and scored ninety-nine points. Mr. Munger makes a specialty of the Bronze turkeys, his strain being noted for large size, deep bodies, broad backs, vigor, stout legs, and beauty of plumage.

The description of the Bronze turkey is as follows: Head long and broad, a strong well curved beak of horn color, dark at the base and lighter at the tip; dark hazel eyes, a long curving neck; back, rising in a convex sweep from neck to tail; a broad, full chest, a long body, deepest at the center, long and powerful wings, well developed tail, long stout thighs and shanks. The head and wattles are rich red in color, the neck a brilliant bronze, the back like burnished gold, each feather banded with black across the end, the breast dark bronze, the body black, shaded with bronze; the primary feathers of the wing black, barred with grey; the secondary feathers similar to the primaries, with the bars changing to a dull bronze toward the center of the back; the wing bows black and show bronze or green reflections in the sun, the wing coverts bronze, each feather terminating with a broad band of black, edged with grey; tail coverts similar to main tail feathers, except the black band shows more of the bronze hue.

Mr. Munger also breeds White and Barred Plymouth Rocks, White and Brown Leghorns, and also White and Silver Wyandottes. He is editor and publisher of the *Poultry Chum*, and has won hundreds of prizes at all the leading shows.

CROP-BOUND FOWLS.

This is a very important subject. Fowls are very liable to it, not only through overfeeding, but from the stuff they pick up and eat, which they should not. There are several things which may be avoided, where people only keep a few fowls, to prevent their birds from being crop-bound. It occurs more frequently perhaps with those who live in towns and who have a garden than with those living in the country. I have often seen people pull up a little bunch of long grass that was growing on their garden path and throw it in to the poultry.

When these pieces are thrown in to the birds they are almost sure to pick them up, and this is one thing which causes a stoppage in the crop. A number of pieces of long grass, as soon as the fowls swallow them, become a hard substance when put in a small compass, especially when it is very coarse grass. It gets over the passage leading to the gizzard, and stops the food from passing, consequently irritation is set up at once in the crop, and the birds become very thirsty.

They drink a lot of water, which causes the crop to be heavy, and the weight of the crop makes the skin break away from the body. The crop falls so that the bottom of the latter is much lower than the outlet leading into the gizzard, and when the crop drops once, it naturally keeps getting worse and worse because it can not empty itself. The round ball of grass remains in the crop for weeks, and in course of time becomes very sour, and a very disagreeable smell comes from it. The hens may still keep laying, as when the crop is fallen the heavy bulk is sunk away from the passage leading into the gizzard, and the food can still pass, but in such cases many of the eggs which the hens lay have a nasty taste, or in some cases a musty smell, because the food in the crop gets sour, as it never empties itself properly. Poultry people often wonder why their eggs taste musty, and this is one cause for it.

There are several other things which are liable to block up the passage of the crop. Bacon rind very frequently does it. When the housewife has been cutting a piece of bacon there is often a rind at one end, perhaps three-quarters of an inch wide, while the other end of the rind may be only an eighth of an inch wide, so that really it is like a three-cornered piece. Such a piece is almost sure to stop up the passage leading to the gizzard It gets fast in the passage, and nothing will move it unless an incision is made. I often have post-mortems sent to me with the bacon rind fast in the passage. I do not object to giving poultry bacon rind, but it should never be more than two inches long, nor should they be wide pieces. Another dangerous thing for fowls is little pieces of sharp bone splintered—that is to say, poultry people often knock up bone for the birds themselves, which is a very fine thing for them if properly done, but in some cases there are little sharp splinters from the bone, and if these are allowed to pass the birds will often swallow them, and that also sets up inflammation in the crop. After they are swallowed they often lay in the crop a long time, and in some cases prick right through the latter, just in the same way as a needle would. Sharp fish bones will serve them in the same way, though the latter are also a very good thing for fowls if they are either cut into small pieces or smashed up, but when the birds swallow them two or three inches long it often causes a stoppage in their crops. Where poultry people have only a few birds, and the refuse from the house is given them, it is not much trouble to pick out the large fish bones, or anything which is liable to block up the passage of the crop. I always preach the doctrine, "Prevention is better than cure."

Referring again to the long grass, it is very easy to cut it. If you get a handful of long grass and lay it on a board, with a sharp knife enough could be cut up in about five minutes for 100 birds. Hold the grass tight in the left hand, and it will cut very easily. It should not be cut more than about half or three-quarters of an inch long, especially if it is coarse. Grass from a lawn that has been mowed with a machine is splendid for them; though it is often more than an inch long, it is generally very fine. Many people cut cabbage leaves up for their birds, the stem of the leaves being very large they cut them up in three-cornered pieces. When they are cut up in this way they often cause a stoppage in the crop. When the stems are given to the fowls they should be cut up in narrow strips, not thick pieces, because the bird's swallow is much larger than the passage leading into the gizzard. Sometimes when fowls are short of sharp grit they will swallow large stones or pieces of coal, which

BRONZE TURKEY HEN, "MISS COLUMBIA," OWNED BY MR. F. M. MUNGER, DEKALB, ILLINOIS.

will cause a stoppage. If a fowl has a stoppage through the food not being digested properly, two teaspoonfuls of salad oil and half a teaspoonful of Epsom salts will often clear the passage, but when it does not, an incision in the crop should be made, and the hard or solid substance should be removed. When poultry first shows signs of a stoppage in the crop it should be seen to at once.

Whenever a hen is noticed to stretch her neck as though she was trying to swallow something, or rather when she has got something which appears to be in her throat, and she cannot get it any further, she should be picked up at once and the oil and Epsom salts given to her. When they are allowed to go on so long that the crop falls very low there is not the slightest danger of opening the latter if it is done properly, and it is a very easy operation; very often the fowl does not make one struggle or kick the whole of the time. I find the best way to open the crop is to lay the hen on her back on a table and let a second person hold their hands over the legs, keeping them stretched behind her, just to keep them down, so that she has no power to kick against anything. The second person should also help to hold the feathers on one side of the crop. The feathers should be damped a little with clean water, if not they are likely to be in the way. Look for the blood veins in the crop and avoid them as much as possible. The incision should be made from one to one and a half inches long, that is in the outer skin, according to the substance there is in the crop. The hole in the under skin may be made rather smaller than the other.

In the case of long grass being in it should be twisted round like a hay band, a little at a time, with the thumb and finger, gradually pulling at the same time as you twist. If it cannot be done this way the handle of a teaspoon is best. I mention laying the hen upon a table to make an incision in the crop, but when the latter is being emptied it is best to let her lay on the left knee of the operator, so that she can be tipped on the slant A pail or bowl should be placed underneath to catch the contents, so that they can be well examined afterwards. The operator must be very careful in making the incision in the crop, and before the knife or lance is taken out it should have the handle of a spoon or something to put inside the crop; if not, they may turn round, and it is a difficult matter to find the incision again without giving the bird a lot of pain. The crop must be kept steady and in one position all the time.

After the crop is well cleaned out the wound should be wiped carefully, and if there is blood on it, it is best to wash it off with a sponge and a little tepid water, so that it is nice and clean outside. If this is not done the hen is apt to pluck the feathers out of her breast in trying to clean them, as the contents often dry on the feathers. A fine needle should then be used with a piece of silk thread. Tie a knot in the end of the thread so that the first stitch does not pull through. Should the crop be very large a piece can be cut out of it, or better still stitched up—that is to say, fold a little piece over to make it smaller. Stitch it in that way, and the crop will take no harm. In an incision an inch long I usually take about six stitches. After the incision made in the crop is sewn up, and the thread cut off, put a little oil on the wound, so that it runs nicely round the crop between the two skins. This will prevent any irritation; then sew the outer skin in the same way, but take care that none of the feathers get pulled in with the stitches.

Put a little oil or vaseline on the stitches, and pour almost half a teaspoonful of salad oil down the bird's throat, which will help to heal the inside of the crop. Some people wash the crop out before it is sewn up, but I never find that necessary. The less you wet the bird's feathers the better. After the operation is over they should have a little bread soaked in cold water, and a few grains of corn. They will usually eat as soon as they are put on their feet. They should be kept in a coop or place by themselves for about two days, so that they cannot run to drink. If they are let drink the water is apt to penetrate where the incision is made. If they are kept on soaked bread and a little hard corn for about three or four days no harm comes of the operation. I have not lost a single bird by this operation.—*W. Cook, in Poultry.*

PLYMOUTH ROCK PULLETS.

In Plymouth Rocks one should be a little cautious about discarding the pullets that show a greenish tinge on the front of the shanks, the back part being a rich yellow. Such birds frequently have by all odds the best colored legs when mature, and especially as hens in their second year. The pullets with clear yellow legs at ending time are usually too light in leg color when mature and almost or quite white when two years old. If one has a pullet with an orange-colored leg, free from spot or wrong shade, he has a jewel, but the majority of pullets with clear legs have, according to my observation, lemon shanks rather than orange. Occasionally, too, the first feathers of a Plymouth Rock chicken are misleading, and one needs to wait for the adult feathers to appear before he can make a wholly safe judgment. Yet, if the chicken be brownish in tinge, it is pretty safe to reject it at almost any stage of its growth.—*American Poultry Yard.*

FOWLS FOR PROFIT IN WINTER.

As a rule a visit to the poultry house on a bleak day, in the winter, shows a very uncomfortable condition of the fowls. They are drawn up, feathers fluffed up, they wander lazily about, and seem to have nothing to do but eat and try to kill time until night comes on. This does not apply to farms where fowls receive but little care, but it is a fact that such conditions exist mostly where fowls are well fed. Now what is the cause of this, and how is it that, with all the food they will eat, and the poultry house close and snug, the hens are not thrifty, and lay but few eggs?

A moment's thought will show that there is some error in the management. It is not in the quality of food given but in the system of feeding. To be producers of eggs the hens should be in the same condition in winter as in summer. What is this condition? Why, simply in a state of busy activity. The first fault is that while the poultry houses may be built so as to not have a crack, yet it is not cheerful. It may be damp, dark, and uninviting. Fowls prefer the open air to a dark, cheerless house, and will endure exposure outside rather than be crowded in a dark place. In the next fault may be mentioned that the fowls are not made to feed themselves, but are regularly stuffed, thereby being induced to remain idle, and consequently more susceptible to cold and disease.

The poultry house should be made light with whitewash, and the floor covered six inches deep with cut straw or leaves. If it is not light enough on account of small windows, knock off the boards from the south side and make a shed of it, and board up in front of the roosts, as protection at night. Scatter wheat and millet seed in the litter, and if the hens are too lazy to scratch, withhold all food until they determine to "work or starve." A hen is often a creature of education. She will run after you for food every time she sees you because you have thus taught her so to do, but when she finds she must work she will soon learn that without effort she must go hungry. In other words, teach your hens to depend on themselves instead of looking to you. You may give them a full meal of the best food you have just before night, but give only a very light meal in the morning, to consist of cut clover and bran, but scatter grain in the leaves for them to work in and help themselves.

Scratching keeps the blood in circulation, and increases the heat of the body, not only protecting against cold but it also assists in warding off disease, promoting digestion, and allowing of a more profitable condition, and induces laying as well as giving the hens an appetite for any kind of food that you may wish to give them.

NOT PROFITABLE.

No breed is profitable when the conditions are not favorable. One should not attempt to keep geese or turkeys in preference to hens unless the advantages are favorable for so doing, and it will not be profitable to keep a large breed of fowls where the small breed will be better adapted. There are breeds which will not thrive as well in confinement as on the range, and there are breeds that can be easily kept in small yards with low fences. In all cases the profit depends on the facilities of the poultryman and the conditions under which he wishes to operate. Profit or loss depends on the observance of all rules that apply to poultry-keeping under the circumstances at the time and the mode of arrangement.

RAISE YOUR OWN MALES.

It has long been the custom to infuse new blood in a flock by procuring a male from elsewhere. This is right and proper with those who do not care to take extra work on hand, but the correct way to bring new blood in the flock is by procuring a hen every year, and mating her with the best male in the flock, keeping only the male chicks from such a hen. By buying a new hen every year and raising the males from her it will give sufficient out-crossing to avoid in-breeding too closely. The reason for so doing is this: When a male from elsewhere is procured he sires all the chicks, and if there is a hidden defect in him, or if he proves to be undesirable, he imparts the disadvantages to every chick on the place, but when the young males are raised on the place, from a particular hen, the chicks from the other hens are not injured at the same time. One should be very careful when procuring the male, but it is safer to raise them in the above manner.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

TO THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

NEW YORK will endeavor to have a rousing show this winter.

ONLY twenty-five cents for six months' trial with the POULTRY KEEPER.

THIS paper gets out on time. Look for it about the first of the month.

DON'T send money or subscriptions to our editor. He lives 100 miles from our office.

THE *American Stockkeeper* and the POULTRY KEEPER for only $1.40—a weekly and monthly.

INSTEAD of oyster shells use sea shells. They are more convenient, and also more easily ground or pounded.

NEVER ventilate from the top. It is cruel and murderous. Fresh air with the thermometer at zero is not very comfortable.

BUCKWHEAT and oats are far ahead of corn and wheat for poultry but are not used as much as they should be.

WHAT is the matter with comparison and scoring? Has the matter been settled? Where are the gladiatorial champions?

READERS.—Send in the names of your friends who may be interested in poultry. We are sending out *thousands* of extra copies now.

THE *National Fancier* is a new Indianapolis poultry paper at fifty cents a year, published by Mr. J. E. Teal, of that city, and we extend it a welcome.

THE economical man does not stop a poultry paper to save less than one cent a week. He "sticks," and gets hold of some article that saves him many dollars.

MR. J. L. MCDOWELL is now editor of the *Colorado Poultry Journal*, Denver. It is fifty cents per year and clubs with the POULTRY KEEPER at sixty-five cents.

FOR seventy cents you can get the *Fanciers' Review* and POULTRY KEEPER. For one dollar we also add *Farm Poultry*, making *three* poultry papers.

"FANCIERS" should not forget that it is the farmer who really makes their trade. The customers among fanciers are rather limited.

WE have an advertisement of the finest lot of St. Bernards in the world—prize winners—as will be noticed by reference to the advertisement of the Swiss Mountain Kennels.

THE Famous Whitewasher, made by F. Schwarz, Fairfield, Ct., is not only a whitewasher but a speedy lice exterminator, and will prevent roup. It does an hour's work in five minutes.

OCCASIONALLY inquiries and communications are delayed in appearing until the succeeding month, due to the fact that we get to press early, so as to be out by the first of the month.

A POULTRY house should not be colder than forty degrees above zero. The hens do not desire the house too warm. It is the damp weather that affects them the most.

THE Rockville, Maryland, Fair was well attended. Among the winners on White Wyandottes was H. L. Wells, of Rockville, who forwarded us the premium list.

THE Colorado State Poultry Association will hold its annual show at Denver on January 14th to 20th, inclusive. Mr. J. L. McDowell, 1621 Arrapahoe avenue, Denver, Colo., is secretary.

JUST now we are being regaled with the usual announcement that "Judge" Wiseman will judge at certain shows. He is supposed to know a brick from a windmill.

MESSRS. M. E. BALLARD & CO., 3449 Cottage Grove avenue, Chicago, announce themselves as general produce commission merchants for the benefit of our readers who write us for addresses of merchants.

MR. C. A. BARTLETT, Worcester, Mass., makes a specialty of his "O. K. Food" for chicks, and keeps a full line of poultry foods, meat and bone, ground or freshly cut, being always ready for shipment.

MRS. SUSAN REED, of Hammonton, N. J., offers her extensive broiler plant for sale with forty acres of land. See her advertisement in September. It has been a very successful plant.

THE man who crosses his breeds destroys them. Only the pure breed can be depended upon. Each breed has a dominant talent, and to attempt to give it two talents only reduces the value of the one.

MR. W. J. SALTER has accepted a position with Mr. Samuel Cushmen, of the Rhode Island Experiment Station, Kingston, R. I. Mr. Cushman is fortunate in securing such an able and experienced poultryman as Mr. Salter.

MILLER PURVIS now owns a half interest in the *Michigan Fancier*, and is also its editor. The *Fancier* is published monthly at Detroit, at fifty cents per year. It and the POULTRY KEEPER together, only sixty-five cents.

ONE pound of green bones, at three cents per pound, is cheaper than wheat or corn at fifty cents per bushel, simply because you will get twice as many eggs by using the bone. If you get no eggs wheat is not cheap at any price.

WE send illustrated plans of an incubator to any one who will send us two stamps for postage and stationery, and who will also send us the names of any persons interested in poultry. Address, P. H. Jacobs, Hammonton, N. J.

SOME of the parties who have been claiming that Black Langshans "sport" albinos are now trying to explain how albinos sport *black*. What is the use of having them black or white if the colors wash out on each generation.

WHAT is the matter with the *Fanciers' Gazette*, Indianapolis? Has anyone seen it, riding or walking, with a bell on his neck? It was too good to be lost. It owes us a notice, as we have been nearly ten years on probation.

MR. G. A. MCFETTRIDGE has received a "call" to take charge of the large poultry plant of Mr. W. H. Truslow, at Stroudsburg, Pa., and has resigned his position with Mr. Hallock, at Speonk, N. Y. The new plant has a hatching capacity for 900 ducklings at one time.

"LOW COAT POULTRY HOUSES" is the title of a new book for poultrymen just issued by the *Fanciers' Review*, of Chatham, N. Y., a copy of which we have just received. It contains numerous plans and illustrations of poultry buildings costing from $25 to $100, and detailed specifications with exact cost of building appear with each description. It also shows several poultry house conveniences. Every one contemplating the erection of a poultry house should have this valuable little book. Price 25 cents. For sale by us.

THE F. W. Mann Co., Milford, Mass., have put on the market the "Simplex" vegetable and clover cutter. It is a combination cutter, cutting both bone and vegetables, as well as clover, and is sold at ten dollars.

UNCLE MIKE BOYER says that the most amusing thing he reads in the poultry papers is the "corn logic." Some one starts in to prove that corn is just the food for fowls and then tops it off with *bone*. Then Uncle Mike loaded his pipe and went into deep thought.

OF all *practical* poultry associations commend us to the Los Angeles, California, Association. It is working to advance the poultry interests, and is engaged in educational work. It is a live association and composed of energetic members.

THERE are over 60,000,000 people in this country, and if rivals will go to the same extent in making their business *known* instead of pulling each other down, they will have more satisfactory results. No man is in the way of another. Strife only causes distrust with the public and assists no one.

MESSRS. WEBSTER & HANNUM, Cazenovia, N. Y., won first and second premiums at the Western New York Fair, Rochester, and first at the State Fair, Syracuse, on their bone cutters. Mr. Webster has just ordered a pair of Blue Madras Games from Abbott Brothers, England.

THE next show of the Missouri State Poultry Association will be held at Warrensburg, December 12th to 15th, inclusive Messrs. Theodore Hughes, of Trenton, Mo. and C. A. Emory, of Carthage, Mo., will, judge. Mr. M. L. Andrews, Sedalia, is secretary, and R. G. Carroll, Warrensburg, assistant secretary.

DO YOU want a weekly poultry paper? If so here is our offer: The *Fanciers' Journal* and *American Fancier* are each $1.50 per year. Send us the money for either and we will throw the POULTRY KEEPER in for *good measure*—that is we send you two papers for one price, or will send you the whole three for $2 50, saving you one dollar.

AFTER all the splitting of hairs over points the man who buys the show birds is always anxious to know their *laying* qualities. A poultryman might as well have a terra cotta bird as one that is useless. The fancy portion of the business will do for those who keep poultry for pleasure, but the people prefer beauty that is backed up by eggs.

DON'T make your poultry house warm and then cut a hole in it to let the warmth escape and the cold air in. We never knew, or heard of a bird suffocating or dying from lack of pure air in winter. It is impossible to keep the pure air out. More birds die from ventilation (which induces roup) in winter than from all other causes combined.

THIS paper is printed from electrotype plates, hence we can print any back number. We have a large office, electric lights, mammoth presses, and an electrotyping department of our own, and also provide our own electric lights from the boiler and dynamo in the building. The POULTRY KEEPER is the best equipped poultry journal in the world.

DIRE vengeance was threatened the POULTRY KEEPER for exposing the attempted White Langshans monopoly. We did not terrify worth a cent, and are not done with them yet. Trying to palm off sports, made-up breeds, and mongrels on innocent people will not be sanctioned by us. The Black Langshan is a grand bird, and *good ones* do not sport white in a day.

ONE or two gentlemen, in contradiction of our claim that a hen begins to sit if she becomes fat, declare that some of *their* hens were *poor* when about to incubate. Certainly—all hens are not alike. We have seen lean people eat fat pork without gaining flesh, and exceptions are always possible. We trust that the sitting hens were weighed on the *first* day instead of the *last*, as they *lose flesh* during incubation.

MR. D. A. MOUNT, who has acted as manager for Messrs. Johnson Brothers, Prince's Bay, N. Y, has resigned his position to take charge as superintendent of the Pine Tree Farm, at Jamesburg, N J., which is the large plant formerly owned by the late T. Wilton Hill. The plant is now owned by Mr. W. H. Ordway, who carries a stock of some 3,000 head of fowls—ducks, turkeys, pigeons, etc, and when Mr Mount's prize winners are added Jamesburg will be able to have a poultry show of its own and with no outside exhibitors either. Mr. Mount's fowls have carried off many prizes from the show room, but his specialties are mammoth Pekin ducks and White Turkeys, and he largely leads on these two favorites.

OLD North Carolina is not being left. Poultrymen from different sections of the State met in New Berne, in September, and organized the North Carolina State Poultry Association. The officers are Messrs. T. A. Green, President, New Berne; Wm. Dunn, First Vice-President, New Berne; J. P. Kerr, Second Vice-President, Haw River; T. H. Murray, Third Vice-President, Raleigh; T. A. McIntyre, Fourth Vice President, Jacksonville; J. W. Crowell' Fifth Vice-President, Wilson; R. A. Richardson, Secretary and Treasurer, New Berne; Executive Committee: W. H. Bray, L. S. Wood, Ralph Gray, J. L. Hahn, New Berne; W. T. Dortch, Goldsboro; T. J. Davis, Charlotte; Cooper and Johnston Graham.

POULTRY FOR PROFIT.

This book is No. 1, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the POULTRY KEEPER at sixty cents we will send the book and also the paper for one year.

A DISEASE PREVENTER.

If you will, once a week, force thin whitewash over the walls, floor, and yard, you will prevent diseases. This may be done with one of those little white-washers (or force sprinklers), known as the Famous white-washer, which costs but a trifle compared with its value. If preferred you may add a gill of crude carbolic acid to each bucket of white-wash. It is economical to use lime, as it destroys the germs of roup.

MANAGEMENT OF YOUNG CHICKS.

This is No. 3 of our series, by P. H. Jacobs, editor of POULTRY KEEPER, and is intended for those interested in raising chicks in large numbers. The price of the book is twenty-five cents, but to those who subscribe to the POULTRY KEEPER for sixty cents we send the paper one year and the book.

PHILOSOPHY AND FACTS.

It is well enough to advocate warm poultry houses but a warm house cannot be built for a song. Properly, a poultry house should be lathed and plastered, and it will then have smooth walls, making lice killing, white-washing, etc., an easy matter, to say nothing of the cracks and crevices stopped with the plastering. True, it will cost something more, but you will gain it in fewer deaths and more eggs.

SOUTHERN OHIO POULTRY SHOW.

The Southern Ohio Poultry Association is arranging for an unusually large and attractive exhibition of poultry, pigeons and pet stock at Washington, C. H., Ohio, December 18th to 23d, 1893. They have a large and well-lighted hall, and Mr. B. N. Pierce, of Indiana, will be the judge. The exhibition is being extensively advertised throughout the country, and there are indications of a great show. Secretary W. R. Dalbey, of Washington, C. H., informs us that everything indicates that all former exhibitions will be eclipsed. The premium lists will be out in a short time. This association is one of the most prosperous and successful in the country, and has always paid up all premium money and specials in full. The attendance is always good and the exhibitors are greatly profited thereby.

BOUND VOLUMES.

We have bound volumes of the POULTRY KEEPER from its start, April 1884, which make a valuable library for poultrymen. Price $1.00, postpaid, for any one year. 1885-86-87-88 are bound in one volume. Price $2.50, by express at buyer's expense, or $2.90 by mail postpaid. They are all substantially bound in cloth with gilt stamp on front. Handsome and useful.

THE POULTRY KEEPER SPECIAL.

This is book No. 4—on Diseases. In order however to make it more valuable we have included many other subjects. We will state that we have simply gone back to the old numbers of the POULTRY KEEPER and put "the best of them together," using the plates of special numbers of the POULTRY KEEPER, hence the name of "Poultry Keeper Special." It contains thirty-two pages the size of the POULTRY KEEPER, price twenty-five cents, but for sixty cents we send it and also the POULTRY KEEPER one year. *Poultry Keeper Special for* 1893 is similar to Book No. 4, only the contents entirely different and equally valuable. The terms for it are the same as for No. 4.

THIS BEATS ALL.

In order to *prove* that there is no offer yet made that will equal ours, you can take your choice of the following. Please read *carefully:*

1. You can get this paper *six months* for twenty-five cents or a year for fifty —. For sixty cents we will send also, with the paper (one year), the book "Poultry for Profit," the price of which is twenty-five cents.

2. For seventy cents we will send this paper and *Farm Poultry*, one year.

3. For $1.00 you get *three* poultry papers, POULTRY KEEPER, *Farm Poultry* (Boston) and *Fanciers' Review* (Chatham, N. Y.)

4. For $1.00 we send *three* copies of the POULTRY KEEPER, to different addresses.

4. For 65 cents we send this paper, and the *Practical Dairyman.*

6. For sixty-five cents you get this paper and the *Southern Fancier.*

7. We send *two* POULTRY KEEPERS, to different addresses, for eighty cents.

8. The *Standard* (which contains the detailed description of all breeds) is $1.00; but we send it and the POLTRY KEEPER one year for $1.25.

In the above we aim to put the prices down low. Examine this paper and you will see, at a glance, that it will be a *loss* to you to be *without it*, as each issue contains a special article on some leading subject.

The twenty-five cents offer, for six months, is to induce you to try it.

DEPENDING ON WHOSE AXE.

It is a little out of place to hug a man and fawn all over him, through the columns of a journal, and then at some future time show his imperfections. This reminds us that a breeder of Bantams, who had been so well admired as to be addressed by the familiar term of "Rocky," was mentioned as being too slow a judge at one of the fairs, and the paper making known the matter did not omit to state that one of the *publishers* was called in to do the work and he did it with lightning speed—of course. Now, we fear that there is something wrong with "Rocky" outside of the matter of judging. Perhaps "Rocky" might not have materialized promptly in response to "send on an ad.," or he may not have believed in lightning speed in preference to good work. That he is a gentleman, honorable, and knows all about Bantams, is a fact well known, and if he *was* a little slow (as any *careful* man will sometimes be), it was not fair to publish it to the world in a manner to denote incompetency. No longer is he called "Rocky," but the "solitary and tall." No classification, a crowded hall, and everything against him at Syracuse, "Rocky" had a hard job before him. That his awards would have been in the right place, however, cannot be denied, but the old admonition of "go slow," did not seem to fit the case exactly. Bantams are *pets*, and belong to the true fancier's department. As "Rocky" (or the "solitary and tall") has bred them for years, we doubt if any-
is capable of teaching him.

SOMETHING YOU WANT.

It will cost you only five cents to get the following back numbers, and they are worth $10 each if they could not be procured when desired. Bear in mind that there are a large number of *illustrations* offered—as the following shows:

Brooders, Incubators, Appliances, Poultry Houses, etc. (many illustrations). Aug. 1889 and Aug. 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte Fertilization of Eggs. Scoring Games. Oct, 1889

Poultry Houses. April, 1887, Oct. 1888, and July, 189 . Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec. 1891.

A Whole Library of Points. A grand issue. August, 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892

Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept. 1891.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Houghton's (Cleveland) Poultry House. February, 1888. Also April, 1892.

Each issue contains other valuable information also. You have the whole outfit shown of the pipe system of brooding in the brooder issue, and the forty-two rules on raising broilers has the whole thing. And yet you can get any one of them for only five cents.

MR. CUSHMAN ON CROSSING.

Mr. Samuel Cushman, of the Rhode Island Experiment Station, has given his experience in an able bulletin, and he deserves the thanks of all who are interested in poultry for his efforts. Mr. C., however, makes use of some arguments in favor of crossing, which we give below, but we do not believe his views should be accepted on the subject as final, for the reason that we cannot see any advantage in crossing. Mr. Cushman says:

Breeders of cattle, poultry and other stock, find that by crossing pure breeds greater vigor is secured in the progeny. The union of two varieties, equal in hardiness, gives stock that is more hardy than than the parents. An improvement in this respect can be depended upon.

By such a combination of different elements or tendencies an impulse is also given that usually causes them to grow quicker and larger, and to be more prolific. By intelligent selection of the breeds the desirable qualities of two may be combined in the cross. Defects in one may be counterbalanced by the influence of another and most or all of the best qualities retained.

Stock may be produced that will excel either pure bred parent in profitable qualities. Fowls that cannot stand exposure but that are great layers, if crossed with certain breeds that are noted for hardiness and are good layers, will give birds that are quite hardy, and also great layers. The influence of the hardy breed to lessen egg production is counterbalanced by the greater vigor given by it, which also sustains egg production in the cross.

Fowls that are noted for table qualities, but are too tender to be reared successfully, may be used to produce crosses that are hardy and vigorous, and in quality of flesh and appearance none the less desirable for the table. A pure breed noted for a certain profitable quality may be so mated with another pure breed that the first cross progeny will excel either of them in that particular quality. Combinations almost without number may thus be made.

How *greater vigor* in cattle can be secured by crossing two breeds of *equal hardiness*, and the offspring be *hardier* than the parents, cannot be made plain by facts, unless the pure breeds have been injured by in-breeding, but we do not allude to inbred stock. A cross of Holstein and Jersey adds nothing to the progeny, and the good qualities from both parents are impaired. Attempts have repeatedly been made with crossing the Shorthorn and Jersey, Holstein and Ayrshire, and Devon and Shorthorn, but such attempts have been abandoned. Each breed has its own peculiar characteristic, which was bred into it by "judicious crossing" in the first place, but it required years to succeed in "fixing" the characteristic.

In the second paragraph above it is claimed that defects in a breed may be remedied by crossing with another breed. It depends on the kind of defects. Defects seldom exist in a *breed* intended for a certain purpose, but they may exist in *individuals*, hence to correct defects in a breed it must be done by selection of particular individuals of that breed. Any other method is to destroy the breed entirely.

The third paragraph contains some curious expressions. Mr. C. says that "fowls that cannot stand exposure, but are great layers, if crossed with certain breeds that are *noted for hardiness and are good layers* (our Italics) will give birds that are *quite* hardy and great layers." We cannot see the necessity of crossing birds that are noted for hardiness, and that are *good* layers, with other that cannot stand exposure but are great layers. When it is known that there is not ten eggs difference in a year, all conditions being equal, between the *best* breed and the one at the foot, the gain in eggs by crossing a *great* laying breed with a *good* laying one cannot be sufficient as an inducement.

What is to be gained by crossing a Brahma and a Leghorn. If anything is gained something is also lost. But suppose that by some cross a desirable bird for nearly all purposes could be obtained. It would then be unnecessary to do more. We could accept the cross and establish it as as a breed, sending all other breeds out of existence. The fact is that in ninety cases in a hundred *crossing* has destroyed the hopes of the poultryman, changing his flocks to mongrels, and obliterating all the characteristics sought.

All pure breeds have been made by endeavoring to *combine* the best qualities of selected breeds then existing, but no one breed has been endowed as yet with a *combination* of qualities. They excel in some respects and are deficient in others. If we are to select the best individuals of two breeds we might as well take the best of one breed.

The Wyandotte is claimed to be a cross of a prolific and a hardy breed—Hamburg and Brahma. If such is the case what is the use of crossing the Hamburg and Brahma again when we have the cross fixed as a type. The pure bred Plymouth Rock is a better bird to-day than when first produced by crossing. The fact is that crossing is uncertain. If two breeds are crossed *some* of the chicks will be much better than the others. A great many will be mongrels.

But it is advised to use only a *first* cross. We cannot see any advantage in the first more than in the second, in comparison with the value of pure breeds. When we begin to get away from pure breeds we burn all the bridges on which we cross.

VALUE OF A SCORE.

The fixing of a value on show birds by scoring them has been discussed, and somebody actually arranged an arbitrary table for the regulation of prices. The absurdity of the thing is shown by the experience of a Western breeder who writes as follows:

"I paid $15 for a Brown Leghorn that scored 92, and the price was considered low. The judge was an experienced one. Expecting to "sweep the decks" with him I took him to other shows but he never reached over 88 points. If he was worth $15 when I bought him he should be worth the same now, but my opinion is that he has lost about $14.99 of his value, and yet he is, if anything, a better bird then when I bought him."

If our friend is a *breeder*, and did not how to buy a bird without some judges' score card being tacked on the coop, he should go out of the business. We can sympathize with a novice who buys on the score card advertisement, as he does not set himself up as a *breeder*, but for a man to advertise and sell birds to the public when he has to buy on the score," and does not known a good bird from one that is inferior, we have no sympathy.

A *breeder* of a particular breed ought to know more than a judge who does not breed the birds he judges. One half of the judges will undertake any duty in the show room, and their decision is accepted because breeders do not wish to embarrass him or the officers by "kicking," but the score card hangs out all the same to give a fictitious value.

The man who has to get a "judge" to select for him is not a breeder but a *dealer*, and he is not capable of giving satisfaction to his customers. In the above case the breeder was punished for his ignorance and justly deserved it.

STILL HARPING ON CORN.

It seems to us that any man of intelligence should know that corn is a standard food for all classes of stock, poultry included, and because we state the *fact* that corn is *fattening*, and should not be used as an exclusive diet, or given in too large a supply, our position should not be misunderstood. A reader who feeds nothing but corn takes us to task as follows:

I like the POULTRY KEEPER, and almost swear by it, but when the editor denounces corn he is simply talking nonsense. I have fed nothing but corn for twenty years, and my hens have free access to all portions of of the farm, where they also secure other grains, such as wheat. I have always had a fair supply of eggs, and have no fault to find in that respect. I feed corn at all seasons, and give them all they will eat, even until they will not care for it. My hens are Leghorns and crosses of Leghorns.

We extend thanks to our subscriber for "speaking out in meeting. His breed is Leghorn, hence are *active foragers*. They have free range, and get insects, grass, and seeds. They will not eat as much corn as he gives them, thus showing conclusively that to them, corn is lacking in egg producing materials of certain substances. A man may feed nothing but corn but that does not imply that corn produces the eggs unless the hen is closely confined so as to prevent her from receiving any other food.

Now, a hen will lay eggs if fed on corn, and will do well for awhile, but there comes a time when she will gradually store up some of the carbonaceous matter of the corn in her body, and sooner or later she will be out of condition as a layer. Corn does no immediate damage, and if a hen is laying regularly she can utilize quite a large proportion of it, but she would waste away and perish if she received nothing but corn continually, as it is lacking in mineral matter. She would soon arrive at a stage when she would die before she would eat another grain, and meet her death by starvation in a pile of corn simply because her system has become surfeited with the elements composing corn, her bones and tissues wasting while her body is rolled all over with fat.

It is best to feed corn, as it warms the body, and largely assists in producing the yolk of the egg, but the practice of farmers in feeding nothing but corn in winter is not economical or advantageous in many respects.

ENEMIES OF POULTRY.

There is greater loss every season from enemies than from disease. The minks, hawks, owls, dogs, and cats play havoc with the stock at a time when the farmer is not aware of it. The majority of farmers will agree with us when we state that during some seasons they feel certain they have hatched several hundred chicks, but when the chicks are ready for market, only one-half of them can be found. The farmer cannot tell where they have gone, or how they were lost, but he knows that they are gone, though at what age or through which source always remains a mystery. The enemies work secretly. They carry off the chicks one by one, and the loss is so gradual that it is not noticed.

How to prevent such loss is not easily explained. No two farms are situated alike, and the shot-gun and watchfulness must be the safeguard. The greatest depredator is the family cat. She will often allow the chicks to roost on her back and eat with them from the same dish, for she knows that they are protected; but the peaceable and fraternal cat becomes a tigress when no one is looking, and many little chicks become her prey, while at the same time she professes to tenderly care for them. No cat can be trusted. All kinds of birds are the natural prey of cats. A cat *will* devour young chicks, no matter how well she may behave herself apparently. Rats are also very destructive, a single rat often killing every chick hatched, and he must be caught, even if all the floors are to be torn up, or it will be a waste of time to attempt raising chicks. Such rats are too sly for cats, traps, or poison. They must be hunted down, and no expense must be spared in the work until they are destroyed. Minks can be kept out of the poultry house, and so can the owls. Dogs usually kill chickens when they become half starved and are ill-fed. Foxes no longer do much damage near the barnyard. The chief enemies are the hawk, rat, and cat, the latter being the most destructive.

HENS EATING THEIR EGGS.

Two difficulties—egg eating and feather pulling—are met with, and being the result of habit, which is acquired, cannot easily be remedied. As soon as a hen learns to eat eggs she teaches the vice to the others. To prevent the vice is difficult, unless specially contrived nests are arranged, or unless the hen is so situated that she cannot well reach the eggs. To prevent the vice make the nests dark, or put them in a dark place. The nest should have a top, so as to compel the hen to walk in instead of jumping on it. It should be high enough off the floor to prevent the hen from standing on the floor and eating out of the box, and the opening of the box should face the wall, instead of the light, so as to have the nest dark. To make such a nest, take a soap-box and knock off the front, leaving the boards on the top, bottom, sides and back end. At the opening of the nest, nail on a strip (at the bottom) three inches high, to prevent the hens from rolling the eggs out. The floor of the box should be seven inches off the floor, which (with the strip in front) will bring the opening to the nest ten inches from the floor of the room. The hen will fly up to the opening, lay her egg and come off, as she will not have room to eat the egg while she is on the nest, and must come off, in which case she cannot reach it from the floor. The nest-box should be only large enough to accommodate the hen.

LIGHT BRAHMA CROSSES.

When size and hardiness are required the Light Brahma is unexcelled. It has many advantages over some breeds, and there are drawbacks connected with the breeds which often debar it from some yards. It is safe to say, however, that Brahma chicks are more easily raised than any other, and if they are fed with judgment it is not often that the hens are excelled for laying. The Brahma has a small pea-comb, which is a partial protection against frost in winter, and it is also aided by heavy feathering. As a bird adapted to confinement it is excellent, for it cannot fly over a fence three feet high, and is contented in disposition. Its faults are leg feathering (which is a disadvantage during wet weather), lack of breast meat, clumsy movements when carrying chicks and aptitude to fatten. Its propensity to easily fatten is a desirable characteristic if hens are intended for market, but when Brahmas reach maturity they are liable to become too fat as layers, unless carefully fed, and but little corn should be allowed them for that reason. When crosses are made with the Leghorn male and Brahma hen, the pullets so procured are excellent, being good foragers and layers, but the males from the cross are worthless, except for the market. A cross of Indian Game male with the Brahma hen produces fine table fowls. The pure-bred Brahma males are excellent for improving common flocks both in size and egg production.

MAKE A HOME MARKET.

If you are near a village or town you will find a class of persons who will be willing to pay an extra price for eggs which are known to be strictly fresh. This is an excellent season of the year for building up such a trade, but do not attempt to satisfy your customers by buying eggs for the purpose, as you will then surely find that you cannot supply fresh eggs, as stale ones will get in among them. Keep your own hens, collect the eggs daily, and make it a rule never to disappoint a customer. One who goes into the business with the object of aiming to give full satisfaction will find a ready sale for all of his eggs at extra prices.

CHICKS THAT ARE FEATHERING.

When little chicks (about two weeks or more old) are feathering, they need very nourishing food, or they will droop, as the growth of feathers enfeebles them. That is the reason so many chicks die at two or three weeks of age instead of younger. Keep them warm, especially at night, and feed meat and ground bone, with a varied food, about four times a day. Dampness must be guarded against, as it will prove fatal to the chicks.

MIXED FOOD.

Wheat, corn and oats are better than any one of the grains exclusively. A variety is always an advantage, but when several kinds of grain are fed, and the fowls are given a variety of it, they have not received a variety of food, but a variety of grain only. No kind of grain, nor mixtures of grains, will serve to promote egg production, or satisfy the demands of the hens. They need something more than can be had from grains. A variety of foods consists of grain, milk, meat, bones and bulky food in some form. If you cannot procure all of these materials, feed a portion of them. Give something else besides grain. Do not deprive the hens of grain, but do not compel them to exist on grain. There are many readers who have written us to know why their highly-fed hens do not lay. Grain is fed three times a day, and the feed-hopper is kept full, but the hens do not lay, and finally become sick and die. Such hens are overfed. They are "grain sick," having been supplied well with grain food, yet are literally wasting away in bone and tissue because they have not a variety of food, the grain being an incomplete ration.

CASH FOR THE WORK.

Granted that the hens may require considerable work when the snow is on the ground, and the season very cold, is there any other work on the farm that will pay as well? How many farmers, or poultrymen, are willing to get up early in the morning and work ten hours a day with poultry, as they are often compelled to do in some other department of the farm? Let any farmer make a comparative estimate of the work given each cow and the labor he bestows on his hens, and then ask which pays the better. The hen pays cash for all work bestowed on her. Eggs are salable at all times, and at good prices. Wheat, corn, and other foods will pay more at this season, if converted into eggs, than into any other product, and the farmer does not have to wait for the cash for his work, for the hen returns him his outlay every day, or nearly so. In those sections where no work can be done in winter the hens can be made to give daily returns of cash, in the shape of eggs, when all other operations are at a standstill, and they will pay well if properly managed.

DORKINGS AND CROSSES.

It is worth the experiment of trying a cross of the Dorking male with Wyandotte hens in order to produce a few fine table fowls for your own use. The pullets from the cross may be retained, and next season they may be mated with an Indian Game male. To extend the cross, the third year use a Houdan male, and the fourth year come back to the Dorking again. These crosses do not produce the best laying fowls, but they are the best of all for the table, and new blood will be added each year. The chicks will not be as hardy as those of the Plymouth Rock or Asiatic breeds, and for that reason there might be unsatisfactory results in raising them for market, but for superb table fowls for your own use, there will be found nothing superior to these crosses.

HOW MAMY EGGS TO A POUND.

Eggs vary in size and weight. Some eggs will weigh as much as six to the pound, and others twelve to the pound. Eight eggs to one pound is considered the standard. The Minorca and Black Spanish lay the largest eggs. When we take the weight of the eggs into consideration, we find that the work done by some hens is enormous. A hen laying six eggs that weigh a pound does twice the service performed by one producing eggs that require twelve to weigh a pound, provided they equal each other in the number of eggs layed. It is the exception that six eggs will weigh one pound, yet it has happened frequently. If eggs were sold by weight, the poultryman would be benefited, as he would prefer to keep hens that lay large eggs, thus securing the greatest return before the hens begin to moult. It costs more to produce a large egg than a small one, and the farmer should have this advantage in his favor instead of permitting the customer to receive more than a fair proportion.

PURE BREEDS FOR IMPROVEMENT.

Show birds, bred especially for perfection of comb, ear-lobes, wattles and plumage, are considered by fanciers as very valuable, but the value of such birds is more for points of excellence for the show-room than for quality. So far as utility is concerned there are hundreds of birds far better than the show-birds, being equally as well bred and possessing greater hardiness and vigor than birds that are more tenderly raised for exhibition. The requirements of the show-room are such that it is sometimes necessary to inbreed in order to secure certain points, and with some breeds, such as Partridge Cochins, two yards must be mated in order to secure show-birds, one yard of birds being so mated as to produce cockerels of a certain shade of plumage, and another for producing pullets of the proper lacing. Two yards are required also for Dark Brahmas, Brown Leghorns and Wyandottes. So far as the farmer is concerned, while he should be very careful in selecting birds that are pure and well-bred, yet it is not necessary for him to breed from two yards that he may have the males and females of a certain color. The breed used should be pure, and as near the standard requirements as possible, for the points of excellency are, after all, the only indications of purity of blood, and but for them there would be no mode of designating the breeds; but the farmer should select for vigor in preference to perfection of comb, legs, wattles, etc., and he should buy in the fall instead of spring, aiming to improve his flock and make it better each season.

MATING FOR HARDINESS.

When mating the fowls, select hens with strong shanks, broad breast and deep in the body. The male may be finer in bone, as it is desirable that he be active. The hens should be the hardiest of the flock, as many of the diseases that attack fowls during the winter are often due to some sick and weakly hen, such as the roup, which spreads in the flock, causing a loss of time in the effort to cure the hens, as well as a falling off of eggs. Hens are intended to lay, and especially when well cared for, but care and labor may easily be thrown away on a flock that has no vigor or stamina. Diseases may be transmitted to the offspring by the parents, and it is important that the hens which are intended for producing next year's stock should be carefully selected. Only personal observation will enable one to select the best, and for that reason every member of the flock should be studied in order to learn all the personal characteristics.

THE HOME-MADE INCUBATOR.

We have been asked quite a number of questions in regard to the plans of the home-made incubator. We will state that our object is educational, to create an interest in artificial incubation, as it may open avenues for employment to some during the winter season. It is not the best, nor perhaps equal to some that are offered for sale, but hundreds are in use, and they hatch well. These plans, illustrated, are offered by the editor, P. H. Jacobs, Hammonton, N. J., who should be addressed, inclosing two stamps for postage and stationery. It may be stated that he does not make incubators, nor has he anything for sale, the plans being offered to those who desire to learn how to make an incubator at home, and directions for operating are also sent. The plans have been before published by us, and are sent in this manner in order to avoid repetition.

NO EGGS.

We are often asked why the hens that are in perfect health and well fed do not lay. The reason is that, in a majority of cases, the hens are too well fed. They are kept up to a fat condition, fed perhaps three times a day, and their reproductive organs deranged. When the hens have giddiness, suddenly die, have soft livers when examined after death, and are very fat, the indications are that they do not have sufficient exercise and are fed too liberally for profit. Too much food has done greater damage than all the starvation and true roosting ever attempted on mismanaged farms.

COMMON FLOCKS AS LAYERS.

It is sometimes stated by those who have not tested pure breeds that the common hens are as good as any. This may apply to that season of the year when nearly all kinds of poultry are in condition for laying, and when all is favorable, but let the advocates of the common hen count the eggs they received this winter, when the prices in some markets ran up to fifty cents per dozen. Bear in mind that a flock of cross-bred or well-bred hens are not what we term "common." We allude to those flocks where no attention is paid to the selection of males, and where the hens are expected to pay their way without any aid or assistance from their owners.

INVIGORATING THE BREED.

As there are several varieties of each breed, the flock may sometimes be invigorated by crossing in a manner to preserve the purity of the breed to a certain extent. For instance, if you are not particular about "points," use a White Leghorn male with Brown Leghorn hens one year, and a Brown Leghorn male the next. For Cochins, a Buff Cochin may be used in alternation with the Partridge or White Cochin. To improve Black Spanish, cross with a Minorca male. A cross of Black Leghorn with Minorca hens produces a grand layer, and a cross of the Barred Plymouth Rock with the White variety is also excellent. Of course, crossing destroys uniformity of color, but improves otherwise.

VARIETY AND RESULTS.

In England quite a variety of food is allowed, and the hens over there lay more eggs than the hens here on the average. Barley, oats, rice, carrots, cabbage leaves and cooked foods from wastes are allowed. Wheat and corn are also given, but principally to the hens for market. Laying hens receive meat and bones, and milk is added to any ground grain that may be fed. The hens that are selected for laying are not expected to be of much value for the market, as there are special market breeds which are not, however, equal to other breeds as layers.

CUT CLOVER.

The way to feed clover to hens is to cut it very fine. If not cut up fine it may cause crop-bound. About half an inch in length is fine enough. Place the clover in a pail after it is cut, and pour just enough boiling water over it to moisten it well. Then throw a cloth over the pail and leave it to remain until morning. In the morning pour more boiling water over the clover, so as to warm it, add a little bran and meal and feed it to the hens in troughs for the morning meal. It is the best and cheapest of all foods for laying hens in winter, and takes the place of green food.

FROSTED COMBS.

If the combs and wattles of the males are frozen the birds will become unserviceable, and when the combs of the hens are frozen the hens will not lay. The comb is a tender portion of the body, and when frozen the bird suffers the same intense pain that a person will when the hands, ears or feet are frozen (or frosted, as it is sometimes termed). On very cold days, and especially during windy weather, the birds should be well sheltered, or frosted combs will be the result.

POULTRY MANURE.

When the droppings are frozen they quickly deteriorate in value after they begin to thaw. To save them, keep dry earth or sifted coal ashes under the roost, as an absorbent, and also sprinkle plaster over the dirt. The absorbent material should be cleaned away as often as possible, and before putting the droppings in a barrel, mix them well with the absorbent. If you have a garden plot it will be no disadvantage to spread the droppings on the ground, especially after the ground has been plowed or spaded, early in the season.

The Dog Fancier is a monthly publication by Mr. Eugene Glass, at Battle Creek, Mich. As we have no dog department we will offer the *Fancier* and POULTRY KEEPER at seventy-five cents, the *Fancier* alone being fifty cents per year.

EGG EATING BY FOWLS.

The habit of egg eating by the hen is, at times, a very serious one with which to deal, though I never have been troubled with it but once, and then for a short time only. As I breed no fowls but Partridge Cochins, I presume I am not troubled as much as those who breed the smaller kinds of fowls, for I think the Asiatics are not as apt to acquire the habit in question as are the smaller breeds, for the former are generally possessed by a quiet disposition, while the latter, especially Leghorns, are very active. As preventives are better than cure, I will suggest a few which I practice. According to my judgement the habit of egg eating is oftenest formed by having soft or thin shelled eggs laid in the nest. These are almost sure to be broken by the hen while on the nest, and she will be very apt to eat the broken egg.

Then, first, feed your hens shells, meats, and such a variety of food that all the eggs will be likely to have hard shells.

Occasionally there is a hen that never lays other than soft-shelled eggs, and she will soon acquire the habit of eating eggs. The best remedy for such an egg eater is to *eat the hen.*

Secondly, give your hens plenty of work, especially the smaller breeds, for "Satan finds some mischief still for idle hands to do." (*Watts with variations.*)

Strew thickly over the hen-house floor, or small yards, leaves from the woods, or chaff from the hay loft, in which scatter wheat, oats, screenings, or the coarser parts of cracked corn. To find the food thus scattered, and partly hidden, will give the hens capital employment during the close confinement of the winter time, and is most excellent to keep them out of misthief.

Again, make your nests as difficult of access as the nature of your fowls will admit, and also make them as dark as is convenient. For Asiatics place the nests eighteen inches from the floor, with a narrow board in front of it. This will give the hen no chance to stand in front of the nest to "fool with" the eggs, but will compel her to enter the nest immediately, and thus cover the eggs from sight and harm.

For the lighter varieties make small, deep nests. Take a small keg with both heads in, cut a hole (not too large) in the side, near the top, through which the hen may enter, and put only enough hay in the bottom of the keg to make a soft nest. This nest is not suitable for the heavier fowls, for when they drop upon a deep nest they are pretty sure to break any eggs that are in it.

Now, if these precautions are not a security against *forming the habit* of egg eating, here is a safeguard against it, or at least a plan for securing all eggs which are laid. Take the lower half of a flour barrel, in the bottom put soft hay, in this form —*i. e.*, high in the center, sloping toward the sides, which are protected by a thin layer of the hay. Cover the top of the half barrel with some stout cloth or canvas, leaving it loose enough for the sag of the cloth to form a pretty deep cavity. In the center of said cloth cut a hole sufficiently large to permit the the passage of a common-sized egg. Make a rope of hay or straw, and, beginning around the hole in the cloth, quilt the hay rope in continuous circles until the upper surface is covered. Place a porcelain egg between two layers of hay, and your nest is in running order and will work every time. This is also a most excellent cold-weather nest, as the eggs are dropped so nicely under cover that they will stand a very low temperature without being chilled. Of course some of the eggs will be cracked by rolling against each other in the cellar, unless they are gathered often, but they will be always safe from the hungry, egg-eating hens.—*Poultry Yard.*

BROKEN FLINT AS GRIT.

Hard flint, crushed or ground, will some day be placed on the market for the use of poultrymen in providing grit for fowls. It is true that nearly all sections have gravel, but gravel is worn by the elements into round shapes, or rather the sharp edges are taken off. The object in swallowing hard substances by the fowls is to secure sharp cutting material, and ordinary gravel does not supply their wants. Many persons use oyster shells, reduced by grinding or pounding, but shells are too soft and do not fully serve the purpose required. Flint is the best material, as it always presents sharp edges, no matter how fine it may be in condition.

THE BREEDING TURKEYS.

New blood shows more improvement with turkeys than with any other kind of poultry. The best foundation is the common flocks. Discard all the males and procure a gobbler of some pure breed, and the next year let the gobbler be procured from some flock different from the first. A surer plan is to use a gobbler of one breed the first year, and one of a different breed the next. As to which is the best breed of turkeys, we doubt if any breed can be said to excel the others. The bronze turkey is the largest, but the point to observe is to secure hardiness and vigor, without regard to size, and this must be done by selecting the best hens and procuring a vigorous male each year.

GAPES.

The following account of this bane of the poultry yard, by Gerald McCarthy, of the North Carolina experiment station, contains the whole matter in a nutshell:

"Gapes" is a disease well known to most growers of poultry, and often destroys whole broods of young chicks. The disease is caused by a very slender, thread-like, reddish nematoid worm scientifically known as syngamus trachealis. This worm is characterized by the permanent union of the paired sexes, and cannot be parted without rupturing the bodies. The female greatly exceeds the male in size.

The matured worms are found only in the windpipe of fowls to which they cling leech-like on the walls, sucking the blood of the parts. The female of each pair produces 2,000 to 3,000 eggs, which remain within her body until she dies. They are then loosened by the decay of the parent body, and if they remain within the windpipe of the fowl the young worms emerge from the shell in a few days, and in a few days are mature couples and begin to reproduce eggs. The hatching of the egg occurs only when it is kept constantly moist and at a temperature of about sixty-eight degrees Fahrenheit. The sexes never pair except in the windpipe of a fowl. If the temperature is below sixty degrees Fahrenheit the eggs will not hatch, but will retain their vitality for a year or more, provided they are kept moist, hence contagious gapes is a wet land disease. When the affected fowl gapes and coughs for breath some of the worms with their eggs are ejected into the water troughs where the fowls frequently congregate, evidently trying to allay the inflammation in the windpipe by drinking copiously. The ejected worms or eggs are greedily eaten by other fowls present, or the water containing them is drunk, thus spreading the disease, and in large flocks producing a veritable epidemic.

Remedies.—The best remedy is prevention. Keep the fowls on dry, permeable soil. Feed generously, including chopped onions or garlic occasionally. Wash out the water trough or pan daily with boiling water. If gapes is present among the fowls, separate the sick ones, add to each quart of drinking water four fluid ounces of a solution of salicylic acid, made by dissolving sixteen grains of the dry acid in four fluid ounces of clear, boiled rain water. The pen in which the sick fowls are kept should be as dry as possible, and the ground should be sprinkled twice daily with water, to each quart of which add four fluid ounces of commercial sulphuric acid.

Where only a few fowls are affected a bit of camphor about the size of a grain of wheat may be forced down the throat of each and will by its odor kill the worms. One drop of turpentine dropped into the throat has given good results. Powdered asafœtida, ten grains per head, may be fed in a mash of corn meal. Chopped garlic or strong smelling onions will also be found beneficial. Turpentine rubbed on the outside of the throat will sometimes cause the worms to let go their hold. The use of a small feather or hair loop dipped in turpentine and thrust down the windpipe of the sick fowl is often effective. The worms may either be withdrawn or else coughed out by the chick.

FEEDING HENS TO MAKE THEM SET.

Brother Jacobs' theory that the non-sitters can be made to sit, and the Asiatics made non-sitters, by a certain process in feeding, must be taken *cum grano salis.* In individual cases, or in some cases, the feeding for non-sitters process might have worked, but we doubt it on general principles. It takes evolution to create non-sitters. And it would take the same evolution to change the American-Asiatic breeds into practical non-sitters. Hence, the theory that any process of feeding will change the habits and nature of fowls as breeds is obviously erroneous.

There is nothing impossible with man that is possible. Every bird, animal and moving or growing thing is subject to man's will and influence. And if the nature of any animal or bird could be changed by feed alone, man could certainly do it.

But the feed theory is inadmissible. Crossing and re-crossing, out-crossing and in-crossing alone can accomplish such transformation. And, if accomplished, *cui bono?* To what purpose?

Our experience this season with a pen of Houdans which we fed bountifully with corn, oats and wheat, so that they really became fat, is to the effect that they manifested no desire to set, while an Indian Game hen in the same pen wanted to set every change of the moon. And we never got so many eggs from a pen of birds in one season as we have from this well-fed pen of Houdans.

But, we are living in a wonderful age, and Brother Jacobs' theory may pan out all right. The ultimatum of market poultry culture will have been reached when, by the fiat of feed, breeders can change their sitters to non-sitters, and their non-sitters to docile incubators.—*Davis' Poultry Talk.*

THE third annual exhibition of the Henry County (Illinois) Poultry Association will be held at National Guard Hall, Geneseo, January 23rd to 29th, 1894. Mr. Wm. G. Warnock is secretary.

FOR WHAT ARE WE BREEDING FOWLS?

The idea seems to have become firmly rooted in the mind of the average man, especially if he is a new beginner, that fowls offered for sale should be prize winners or show birds. Hence, the first question asked of a breeder by intending purchasers is: "What will the fowls score? are they from prize winners?" etc.

And this leads us to ask: What are we breeding fowls for? Are we breeding for pets or for useful purposes? Are we breeding birds only for feather, legs, comb and the show room? or,

Are we breeding for eggs and for the table? or is all our labor given and money spent on fowls purposely to fit them for exhibition purposes, regardless of vigor and general purposes for which they were created?

Certainly, we want our thoroughbred fowls kept in their purity. But the practice of breeding so finely for fancy points is deteriorating them, so that some strains require much coddling and nursing to keep them on their pins and in average health, so much has their vitality been sapped to make them "feather" and "point" as finely as possible.

And on the heels of excessive fowl fancying has come innumerable preparations to "make fowls lay," to "aid their digestion," to "keep them well," to "stimulate them," to "give them an appetite" just as the toper who must have his bitters before he can get up an appetite for breakfast. Then come the innumerable remedies to cure the innumerable afflictions caused by too fine breeding and a too free use of the preparations "to make fowls lay," and so on.

We are an ardent advocate of the show room. For years we have been diligent in urging the formation of local poultry organizations and the holding of local shows, because the show-room is a school-room, where much can be learned. Besides, the local or county show is the small breeder's show, is everybody's show, and will be patronized by those who cannot afford to go to the big shows at a distance.

We repeat: What are we breeding fowls for if not for eggs and the table?

And, if this is our ultimatum, had we better not reverse our methods, or, at least, drop a few notches on fancy points, and breed for vigor and general utility?

Of course, out-crossing will be somewhat of a necessity to impart vigor and new blood to decimated strains. But where is the breed or strain that has not, at some time, been the subject of an outcross?

But this is a subject that will admit of much discussion. However, it is evident that something must be done to insure vigor in our thoroughbreds, even if it be at the sacrifice of strictly fancy points.

Brethren of the poultry press, fellow breeders, what are we breeding for? We think this question worthy of your gravest consideration.—*Davis Poultry Talk.*

AUTUMN MANAGEMENT OF POULTRY.

At this time the poultry yards are usually crowded with old and especially young stock, says *Practical Farmer.* Crowding poultry is always dangerous, and disease is apt to make heavy inroads into the flock if the necessary precautions of cleanliness are not strictly attended to. With greater numbers of large fowls comes an accumulation of filth, then vermin and disease. The easiest way to get around the difficulty is by the free use of absorbents in all places where fowls are crowded together during the night. I usually recommend sifted coal ashes as one of the best absorbents—this simply because it is most likely on hand during the winter, and a waste material for which most people cannot find a profitable use. But in the warmer part of the year, and just when absorbents are needed more than any other time, coal ashes are not often available, and wood ashes should not be used for the purpose, as they are worth more for other uses, and worse than worthless as an absorbent in a poultry house. In dry muck and road dust we have most excellent material in this emergency. You may think that road dust is of no value. It is true it can be had for the hauling in most places, and during any dry spell in summer or fall; but I would be willing to pay a reasonable amount of cash for it if I could not get it otherwise. No poultryman should neglect to get a load or two of it, or a load or two of dry muck, if available, and store it right on the floor of the poultry-houses for the fowls to scratch in and dust themselves, and for free use under the perches as needed. It tends to cleanliness and freedom from vermin. A load or so of river sand, with the small shells, etc., will also come handy, furnishing, as it does, all the grit and lime the fowls may need during the winter. This material also tends to cleanliness, and with the road dust, and muck and coal ashes, will make a most excellent absorptive material for poultry-house floors. With these requisites and further precautions, as an occasional washing or spraying of the perches, and the whole interior of the house with kerosene, the battle against insects and disease is about won.

WE still believe that a Standard for each breed, to be sold for ten cents, would be a better source of revenue for the American Poultry Association than the selling of a large Standard for one dollar, though both might be sold also.

THE FOUNDATION STOCK.

There is more yet to learn and to accomplish in the management of poultry than may be supposed, and while breeders and farmers have been giving their attention to the improvement and advancement of the breeds they have not devoted as much attention to individual members of each breed as they should have done, with the view of adding greater value to the breeds.

The above point may be made plain by a reference to the remarkable "record breakers" among the Jerseys and Holsteins. While the breeds are celebrated as possessing certain remarkable characteristics, yet the real great advancement has been made by the selection of one or two choice animals as the foundation stock. Examine the pedigrees of a hundred selected Jerseys and nearly all of them will trace back to the same source, perhaps to Eurotas or Coomassie. Now, the Jersey breed existed long before the birth of the two named, and it was also famous for butter production, but the superior excellence of these cows induced breeders to adhere closely to their families. It was the few individuals that improved the breed, and not a general improvement of the whole, as then existing.

The same applies to poultry. If the hens are to lay more eggs the increased prolificacy must become inherent, and the foundation stock upon which improvement must be built will be a few individual hens and not any particular breed. If some noted cow can be produced, as has been done, which yields fifty quarts of milk in a day, and another produces over thirty pounds of butter in a week, there is a prospect held out that the domestic hen should reach 250 eggs in a year, or even 300. It is a remarkable flock which contains hens that will each produce 150 eggs in a year, and but little increase has been made in the average during the past two or three decades. It is time that attention was given to "record-breaking hens," of each breed, breeding less for points and more for eggs. If this is done a great advance will be made before the nineteenth century passes by.

FRUIT IN THE POULTRY YARD.

Fred Grundy has the following to offer in the *Rural New Yorker,* relative to fruit grown in the poultry yard by a Mr. Burton:

The plum trees in our poultry yard yield a fine drop every year. They are troubled but very little by the curculio. Not a weed or spear of grass grows among them. The birds kill the grass, and such coarse weeds as they avoid are cut off with a hoe, so that the ground is perfectly bare.

After the trees have bloomed I go among them two or three mornings each week with a little wheat in my pocket and a mallet in my hand. At that time the fowls are very hungry and naturally at my feet and all around me. With the mallet I strike the stub of a branch—which has been previously sawed off for that purpose—a sharp blow, and at the same time scatter a few grains of wheat on the ground under the tree. The fowls tumble over each other to get the grain, and every bug, beetle or worm that falls goes into their crops with it. I do this very early in the morning while the beetles, worms and bugs are chilly and off their guard, and while doing it wear a slicker to keep from being drowned in dew. The plums are very fine and better than any large fruit we grow.

Apple trees do well in the poultry yard and yield excellent crops. I have seen them fairly loaded with fine fruit when those in the orchard were bearing nothing to speak of. They should be trained rather high—not less than five feet—and the fowls prevented from using them for perches by having the flights of one wing cut off. With a pair of strong, sharp scissors the wings of a large flock can be pruned in a short time, and if done in the spring, will stay done until after moulting in the fall.

I have also grown some splendid Kittanning blackberries in the poultry yard. The canes grow six to eight feet long, and most of them were trained along the fences. Those away from the fence were cut back to four feet. The fowls never trouble the berries until they begin to turn red, and then they were shut out and kept out until the fruit was gathered. The berries were very large, luscious and sweet—simply immense!

LEGHORNS AS WINTER LAYERS.

The Leghorn stands high in the front rank, not only as one of the best egg producing breeds, but also for hardiness and adaptability to the range. It has been claimed that Leghorns are not good winter layers, due to the fact that they have large combs, which are easily affected by frost on very cold days. Our own experience with Leghorns is that they are excellent winter layers if kept in a warm and comfortable house. It is well to state, also, that no breed of fowls will prove good layers in winter unless they are kept in a warm house, and the Leghorns seem to suffer from frosted combs but little as compared with some breeds having low combs. Being small in size it is easier to provide room for fifteen Leghorns than for ten Cochins or Brahmas, while the eggs from Leghorns are fully as large as those from the hens of other breeds.

WE will send you three poultry papers one year, for one dollar.

THE MANN BONE CUTTER.

MR. F. W. MANN, INVENTOR OF THE FIRST GREEN BONE CUTTER.

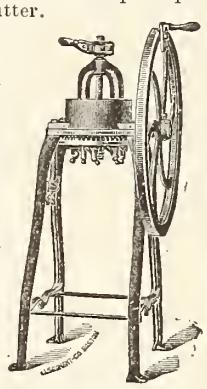
Mr. Franklin W. Mann was born in the old town of Wrentham, Massachusetts, July 24, 1856, in what was known for many years as the Old Red Mansion. He was a farmer boy, brought up on a large, sandy, New England farm, a grant to the Mann family in the time of the Indians. He was born of staunch, Puritan parentage, the youngest of seven brothers. With the farm went an old up and down saw mill, and a small work shop for farm repairs. In this small, but wonderful shop, was a medley of tools, which were very useful to those accustomed to the collection. It was a combined wheelwright,machine and cabinet shop, tinner's tools, millwright repairs. harness shop, and last, but not least, a boot and shoe apparatus. From this shop was built, by the Mann boys (for that was what they were called), the farm buildings and store work for the same. All machines, farm tools and carriages were repaired. Tires of the farm wagons were often set during the noon hour of a hot hay day. The saw mill and water dams were built and kept in order. Many labor saving machines were invented, harnesses were repaired, and also all the boots and shoes of the family. There were fire arms of all descriptions, the Fourth of July being the great holiday of the year, when all the boys of the town (often as many as sixty) collected for a dinner and good time at the

"OLD RED HOUSE."

"Old Red House," and a swim in the mill pond There were no "rainy days" at the farm, much to the regret of the boys. Between the large, stony farm, the large area of wood and lumber lands, the water mill, and the work shop, all hands were strictly employed exeept Sundays and winter school-days. Franklin, being the youngest of the family, was favored somewhat, and after two partial years in the Walpole High School, during which time he took extra studies, reciting evenings to William, one of his older brothers, he entered Cornell University, at Ithaca, N. Y., at the age of eighteen, and graduated in four years as mechanical engineer, in June, 1878, at the age of twenty-two. During his university course, besides his mechanical studies, he studied chemistry and physics thoroughly for four years, excelling in physics and mathematics to such an extent that during the whole four years, comprising thirty-six examinations in these studies, he made but one failure in getting a full mark. Having an especial interest and aptitude for chemistry and physiology, he continued his education for four years in the Boston University School of Medicine, graduating as Doctor of Medicine in 1883. This gave him an insight into Physiology, Hygiene and Dietetics not well obtained elsewhere. After practicing medicine for a short time, and finding that most of his attention reverted back to his early manual training at

THE WATER MILL.

home, and later to his mechanical training at Cornell University, he ventured into the machine business at Milford, Mass., in 1887, by buying out a machine jobbing business already established. After establishing himself,and largely increasing the business, his attention one day was called to the fact that there was no practical machine then on the market for working up green market bones for poultry. Knowing so well as he did the exact chemical composition of these market bones, and the requirements of poultry for large egg production, he saw at a glance what an immense amount of most valuable food was going to waste every day all over the country simply because there was no machine able to reduce this fresh market bone to poultry food. Consequently he invented a machine at once, and proceeded to make a trial machine. He avoided all former methods of working up bones since he knew well their imperfections. The new plan proved a success, the first small and imperfectly constructed machine cutting, when run by a belt, four and three-quarter pounds of fresh market bones in fifty seconds, which was at the rate of 360 pounds per hour. This is the same size machine as the F. W. Mann Co. are selling to-day as their No. 6 and No. 2 cutter. A few poultry men, knowing the immense value of this cut market bone, purchased the first machines, and the bone cutter trade began in a small way. The POULTRY KEEPER, which had been a strong advocate for fresh bones for poultry for a long time, now took up the subject of a bone cutter, which was a demonstrated success in connection with feeding green bone to poultry. Its large circulation gave new impetus to the manufacture of Mann's Bone Cutter, the first and then only bone-cutting machine in the wide world, and created a still wider spread interest in fresh market bones for poultry. During the first years of the business this new unimproved bone cutter went through many important changes (over sixty-eight in all). To show the inventor's perseverance and steady habits, it might be mentioned that during a full four years' university course (from the age of eighteen to twenty-two) consisting of over 2,960 recitations and lectures, he was not absent from one single lecture or recitation. This indomitable energy has carried him in the same way for five years and enable him to perfect and simplify to the furtherest extreme his bone cutting machinery. Excellence was the goal to be obtained. Being on new ground, and having no machine whatever to pattern after, many errors were made at first, but they were as quickly corrected. The original principle of the Bone Cutter, however, was never changed in the least, and five years of tough, actual experience among poultrymen has fully established the correctness of the principle of the Mann Bone Cutter.



THE MANN BONE CUTTER.

Upon the success of this principle has grown up a large and rapidly increasing demand among progressive poultrymen for this machine throughout this and foreign countries. The F. W. Mann Co. now own six patents, with three more pending. Exhaustive search in the patent office in Washington, and thorough inquiry over the country, show the Mann Bone Cutter to be absolutely the first bone cutting machine ever made. Mann's Bone Cutters have taken a medal at every exhibition awarding medals where it has been shown, and a First Prize or Diploma at every agricultural show awarding such where it has been exhibited during 1892.

Diploma awarded by the Attleboro, Mass., Agricultural Association, 1889. Bronze medal and diploma of the Indus. Exhibition Association of Toronto, Can., 1889. Certificate of merit by the Bay State Agricultural Society, 1889. Bronze medal and diploma from the Mass. Charitable Mechanic Association, 1890. Bronze medal and diploma of the Industrial Exhibition Association, Toronto, Can., 1890 Silver medal of the Industrial Exhibition Association, Toronto, Can., 1891. Diploma of Western New York Agricultural Society, Rochester, 1891. Diploma at Rhode Island State Fair, Providence, 1892. First and second prizes at the Western New York Agricultural Fair at Rochester, 1892. First premium, Oswego Falls (N. Y.) Agricultural Society, 1892. Diploma at Montreal Exhibition and Fair, Can , 1892. First prize New York Agricultural Society, Syracuse, 1892. First premium at New York Interstate Fair, Elmira, 1892. First premium and diploma at Douglas County Agricultural Society Fair, Omaha, Neb., 1892. First premium for Double Hand Cutter at Kansas State Poultry Show, Topeka, Jan., 1893. First premium at Huntington and Shelton Poultry Association, Shelton, Conn., Jan., 1893. First premium at the Central Mass. Poultry Club, Worcester, Jan. 1893. Diploma as first prize at Sonoma County Poultry and Pet Stock Association, Petaluma, Cal., Jan., 1893. First premium for Single Hand Cutter, Kansas State Poultry Show, Topeka, Jan., 1893. First and second prizes at Madison Square Garden, Feb., 1893.

The editor wishes to state here that he has had the pleasure of visiting Mr. Mann both in his family and at the factory. The indomitable energy of the man, coupled with his educational training, beginning in his youth at the work shop and farm, supplemented by a scientific and mechanical course at the University, enabled him to grasp thoroughly and correctly mechanical principles, and when he applies them to the process of reducing green bones to the form of poultry food he made no mistake. His four years' course in chemistry and three years medical course enabled him to judge correctly about the utility of different foods for poultry and he had courage to invest a large amount of money in the bone cutter business because he had actual knowledge of the value of fresh bones for poultry. Taking in consideration his early training and his education, it is not surprising that he should know what was needed and how to do it.

FRENCH EXPERIMENTS IN FEEDING.

Professor Long prepares for the *Mark Lane Express* a translation of an account in a recent French publication, *Le Dictionnaire d'Agriculture*, concerning experiments with poultry feeding. This work was begun by the late M. Barral, and is now being continued by other eminent French writers and investigators.

Comparatively few experiments have been made in poultry feeding, and M. Barrel, recognizing the fact, lays down as a rule that in every case the food given should be in proportion to the weight of the birds, taking into consideration their active nature and such accessory products as eggs and feathers. Generally speaking, an average hen will consume three ounces of grain per day, or over a bushel in the course of the year, but the weight of gallinaceous birds varies considerably, and hence no really definite idea can be formed of what they are capable of consuming to the best advantage. It is advisable to supply a mixture of foods such as oats. buckwheat (where it can be cheaply obtained), and maize. Boiled potatoes are also beneficial, as well as various meals, herbs, salads, and cooked and uncooked vegetables. Perhaps the best system to adopt, especially where a number of fowls are kept, is to change the diet from time to time, diminishing or increasing the same as experience may suggest. Where, however, it is necessary to fatten poultry for table purposes, they should be given as much food as they can possibly consume without harm, but it should consist of highly nitrogenous and farinaceous substances.

In referring to turkeys, M. Barrel remarks that, after having been given the run of a good pasture, it is necessary to have recourse to very nourishing and stimulating foods, and a mixture is recommended composed of bread crumbs, boiled eggs, onions, nettles, a thousand leaved grass (evidently yarrow), and drained curd. I have frequently advised the use of curd as a valuable food for chickens. If made from new milk it contains a large percentage of fat—really butter—the principal ingredient being a nitrogenous and albuminous substance, which is the chief element in cheese. If, however, it is made from skim milk, almost the whole of the fat contained in curd made from new milk is absent, so that skimmed-milk curd, which is one of the cheapest foods that can be given where milk is produced, is of especial value for chickens, and indeed for fowls, as it is highly nutritious, easily digested and stimulating.

Ducks, as everybody knows, are naturally fond of water, in which they find no small amount of their food; but in fattening it is essential to specially feed them by hand upon a diet consisting of mixed grains and animal food.

In France, where geese are very largely bred, the birds derive the principal portion of their food from the fields and pastures, to which they are driven in flocks, like sheep. They should also be supplied with a mixture of barley and buckwheat meal. When put up to fatten, oats and curds should be given, followed by barley meal, buckwheat meal, maize meal and pea meal, linseed, with herbs of a stimulating and aromatic nature. After this they may be hand-fed or crammed with boluses of meal. It may be observed that buckwheat meal is especially adapted for fattening poultry, containing, as it does a large percentage of oil, which is obtained through it means at a much cheaper rate than fatty food of almost any other description. Buckwheat is not used with us to the extent it should be, and this in a great measure is probably owing to its cost; but it should be remembered that corn dealers who are only applied to for small quantities are obliged to charge a high price for it, as it would not pay them to keep a considerable supply on hand merely to meet an insignificant demand.

HOW TO TREAT A MAN.—BY A HORSE.

The following article from the Chicago "Humane Journal" may set some of our readers to thinking knew thoughts; if so,we are glad for the horse's sake: When a man drops from sheer exhaustion or illness, promptly seize an end board or a cart stake and pound him on the head and on the ribs. If this does not recuperate him, kick him violently in the belly. This treatment will restore him if persistently administered. If a man finds his load too heavy and feels that it will seriously strain him to proceed, kick off a fence board and knock him down —and hammer him thoroughly with the board. This will give renewed energy and he will make no more fuss. But do not on any account reduce the load. That would look too much like common sense, or humanity, and he will be likely to balk again when over-loaded. If a man refuses to drink when you offer him water, don't give him any water for two days. That will "teach him" to be thirsty at any time you find it convenient to attend to him. It is a good plan to ply the whip frequently on a man who is at work. No matter if he is doing his best, hit him now and then on "general principles" and to prevent him taking any comfort. If his load is not heavy, oblige him to go enough faster to make up for it. Work him hard enough to bring down the average life of man one-half as is done with horses. If no whip is handy, use a club. Tie your man's head back in an unnatural position, with his eyes up towards the sun. This will give him a "fine appearance," and "prevent stumbling." Of course he will not be able to do as much work in this fix, but it makes him wretched, so it is all right. In winter remove his clothing to "prevent his taking cold." He will also "dry quicker," when you overwork him. You must hang a blanket on his back—but leave his neck and limbs exposed—when he is not at work. Men thus treated are "much healthier" than when allowed winter clothing. If not perfectly convenient to feed a man, who is working for you, at noon, let him go without, and, by active use of the whip secure as much work as the food would have secured. Of course it wears out his vitality and distresses him, but that is no matter. Put tight shoes on your man and keep them there until he is very lame with corns. To change his shoes often costs money, not much, but some, and lameness and misery are of no account if you can save a dollar's worth of shoes a year. When you hire a man do not be hampered by any humane notions Get all you can out of him. True nobility consists in getting money, not in decency, or kindness, or what some noodles term "character." Get money, even if is all blood-stained. These are correct principles, I am sure, for I learned them when a colt from my master, who treated all his horses on this plan—and don't he know what's what ?

SIGNS OF THRIFT.

When the comb of a fowl is bright colored, showing it to be full of blood, and shaking with every activity of the bird, it is in a healthy condition. With this condition of comb you will discover the utmost activity in your fowls, starting at every sound or motion. Their movements are not like a nervous jump but with an elastic spring, showing a condition of vigorous health. On the contrary, if the combs and wattles are a purplish red and the movements of the body sluggish there is disease and danger.

MONEY SAVED:

☞Order your periodicals of us, and save money. Look at this list, and see that you get in many instances two papers for less than the price of one.

	Publisher's Price.	Price with our paper included.	Our Price Alone.
Amateur Sportsman, N. Y.	$1 00	$1 05	$ 85
American Agriculturist	1 50	1 65	1 35
" Bee Journal, Chicago	1 00	1 45	95
" Farmer, Springfield	50	85	45
" Stock-Keeper	1 00	1 35	90
Art Amateur	4 00	3 95	3 60
Arthur's Home Magazine	1 00	1 20	85
Babyland	50	85	45
Bee Keepers' Advance	50	80	45
Breeders' Gazette	2 00	2 25	1 85
Century	4 00	4 05	3 75
Chicago Weekly Inter-Ocean	1 00	1 40	95
Christian Herald	1 50	1 70	1 30
City and Country	50	80	45
Cosmopolitan	1 50	1 85	1 45
Cultivator and Country Gentleman	2 50	2 40	2 00
Demorest's Monthly Magazine	2 00	2 15	1 75
Detroit Free Press	1 00	1 45	95
Dog Fancier	50	80	40
Fanciers' Journal	2 00	2 10	1 65
Fanciers' Monthly	1 00	1 25	95
Fanciers' Review	35	65	30
Farm and Fireside	50	95	45
Farm and Home	50	80	45
Farm Journal	50	70	40
Farm Poultry	50	70	40
Farmer's Review	1 25	1 60	1 15
Frank Leslie's Ill. Newspaper	4 00	4 00	
" Popular Monthly	3 00	3 00	
Game Breeder	95	1 20	85
Game Fanciers' Journal	50	80	45
Game Fowl Monthly	1 00	1 10	75
Geflugel Zuchter	50	85	40
Godey's Magazine	3 00	3 30	2 90
Golden Days	3 00	2 95	2 60
Harper's Bazaar	4 00	3 90	3 60
" Monthly	4 00	3 90	3 60
" Weekly	4 00	3 90	3 60
" Young People	2 00	2 20	1 85
Home Queen	50	70	40
Horseman, Chicago	4 00	3 85	3 60
Household	1 10	1 30	90
Housekeeper, (Minn)	1 00	1 25	90
Ill. Christian Weekly (new subs.)	2 50	2 85	2 45
Lippincott's Magazine	3 00	3 00	2 60
Ladies' Home Journal	1 00	1 30	90
Michigan Poultry Breeder	50	75	45
National Stockman and Farmer	1 50	1 70	1 35
New England Fancier	50	75	45
New York Tribune, weekly	1 00	1 25	75
" World, weekly	1 00	1 40	95
Our Little Ones	1 50	1 60	1 25
Peterson's Ladies' Magazine	2 00	2 00	1 70
Philadelphia Weekly Press	1 00	1 40	95
Philadelphia Weekly Times	1 00	1 40	95
Phrenological Journal	1 50	1 60	1 25
Poultry Bulletin	50	85	45
Poultry Chum	25	60	25
Poultry Journal, (American)	1 00	1 00	75
Poultry Journal, (Ohio)	1 00	1 00	75
Poultry Herald	50	80	45
Poultry Topics	25	60	20
Poultry World	1 25	1 30	1 00
Poultry Yard, (American)	1 50	1 70	1 35
Practical Dairyman	50	70	40
Practical Farmer, Philadelphia	1 00	1 25	90
Practical Poultryman	40	85	45
Prairie Farmer	1 00	1 30	90
Presbyterian Journal	2 00	2 10	1 75
Scientific American	3 00	3 20	2 85
Seedtime and Harvest	50	75	35
Southern Fancier	50	90	45
The Fancier (Pigeon)	1 00	1 20	85
Toledo Blade	1 00	1 40	90
Vick's Monthly Magazine	50	75	45
Western Poultry Breeder	25	60	20
Western Poultry Journal	50	70	45
Wide Awake	2 40	2 60	2 30
Youth's Companion, new subs only)	1 75	1 80	1 40
Youth'sCompanion, ((renewals)	1 85	2 00	1 90

PRICES FOR EGGS.

One of the unaccountable things in poultry culture, says Webb Donnell, is the apparent willingness of the great majority to receive just about half as much for their egg product as might be secured if the proper steps were taken. I have known, for instance, forty-five cents per dozen to be gladly paid in the Boston market for the right kind of eggs, while the farmers in my vicinity were receiving, in the local market, about twenty-five. It is interesting to see what sort of eggs the city market is eager to pay for.

In the first place, they must be *known* to be strictly fresh, and this is known to be the case with certain consignments, because they contain the name of a shipper who always sends first-class goods. His name is as much an endorsement of the value beneath it as it would be upon a bank check. A prominent commission dealer in Boston recently wrote me concerning a poultryman who lives in Massachusetts: "He ships the finest eggs that are received in this market." This is one of the men who get forty-five cents for their eggs when others are getting but half of that sum, because his eggs are among the "finest" in size, color, cleanliness and freshness.

Different markets prefer particular colors in the shell. Boston and a few others pay several cents extra for eggs of a uniform brown color. It may be a foolish fancy, but that is of no consequence; it pays to cater to people's fancies when one is selling them goods. Other markets desire pure white in the shells, but all markets unite in paying only the highest rates for such as are clean and of a good size—not necessarily over-large, but certainly not below the average.

A lot of eggs that might well be classed as "first-class" will get an inferior rating when sent in the dirty condition so often seen. A half-dozen stale and poor eggs among a case full of fresh will send the whole lot into an inferior division, though they be large, clean and of the uniform color desired.

Moreover, stock that is first-class in every other particular, but containing a mixture of shades and colors, will fail to secure the highest price in the markets that are particular about color.

To secure this price, then, the flocks must be uniform, or at least they must lay eggs of a uniform size and color. The Asiatics and some of our American breeds producing remarkably handsome brown eggs, while the Mediterranean fowls, which include the popular Leghorn family, are better fitted for supplying those markets that call for white shells. Good-sized and uniform eggs can be produced by setting only such eggs as one desires the future pullets should lay. If care is taken in this way for several years very excellent results will be obtained. The eggs must be shipped at least weekly to one dealer, that a reputation may be established for honest goods, and they must be "as clean as a whistle." A flock of sufficient size should be kept to render such a course profitable. Such a flock should also be made to lay while the price of eggs is naturally highest, in the fall and early winter. This can be done by raising early pullets, or by getting fowls quickly through their moulting season, by extra care and extra food of the proper kind.

Some enterprising persons have tried the experiment of marking on each egg the date on which it was laid, together with the name of their farm or yards, that a reputation might be built up. This can be done by a rubber stamp or stencil, that will fit the rounded surface of the shell, but will, of course, take considerable time if large numbers are marketed.

Still others make yearly contracts with those who consume large quantities, such as stewards of large hotels, proprietors of restaurants or of fancy bakeries, by which they receive a stated price the year round for fresh stock, no matter what price rules in the market. They can readily obtain, in this way, some five or more cents per dozen over the average price during the year for common stock.—*Cor. Metropolitan.*

SPREADING DISEASE.

As all the birds in a flock drink from the same vessel it is plain that should any one of the hens have the roup, or some other contagious disease, it will be communicated to all the members of the flock. This cannot be avoided very easily, as it is an impossibility to prevent the difficulty, but by noticing the flock daily, in order to discover the first indications of sickness, and immediately removing the sick bird from the others, the danger of infection may be averted. It is not safe to use disinfectants in the water, as they will do more harm than good if the fowls are compelled to drink them constantly.

DRY FOOD CONTINUALLY.

What to feed as a change from the dry food at this season is a problem, as it is difficult to procure green or succulent food of any kind. Cabbages are excellent, but they are expensive at times, while even potatoes are high this season. Cooked turnips and scalded chopped clover are the cheapest foods of a bulky nature, and should be supplied, though a cabbage may be given at least once a week. The object should be to vary the food as much as possible, giving the hens anything that they will accept as a change of diet.

TREATMENT OF SHOW BIRDS.

Good birds often miss recognition at shows for want of proper preparation. To do them justice they require to be both cleaned and suitably fed. An American expert says: Washing is simple and easy and yet many spoil their birds by only half carrying out the operation; they fear they may damage the plumage, or wet it too much, or that they will be unable to get the soap out or to dry properly the feathers and thus scores of birds are ruined in appearance by only partially cleansing, when it would have been better to have left them untouched. Birds should be washed two or three days before wanted for show, and our favorite time for tubbing is when the sun sets; then the birds are more docile and like to be quiet. Care must be taken that the tubs are free from grease, cans of hot and cold water impregnated with iron must on no account be used—rain, spring or clear pond water are all preferable—provide white curd soap, a wooden nail brush of fair size, a sponge, some clean soft toweling—a wine glass full of some cordial in a phial and then last, but not least, a good open fire which can be kept exclusively for the birds while drying. Put in one tub of hot water, as hot as the hand can comfortably bear it, a good lump of soft soap to make a tub of suds; melt up every atom of the soap and if the water is too much chilled by doing so, again pour in hot water to obtain a comfortable temperature, then place in it the cleanest bird and soak it from head to foot. Rub the suds under the wings in the thick feathering, around the back and in neck hackles; do it thoroughly, make the bird look like a drowned rat; take the sponge and with the curd soap make a lather and go over all the parts carefully, but thoroughly. With nail brush wash the legs and feet, and then, with sponge in hand rub over and over again the whole body from head to tail; fear nothing with a big fowl so long as the head is above the suds, and then when all is clean, extract a feather from such of the birds as was the dirtiest, and rinsing it in cold water see if it is white and clean; if not, repeat the washing until the plumage is pure. Next put the bird in the second tub which has been filled with luke warm water and wash out every particle of soap, rinse with hands and sponge every portion of the body and then, when all soap has been fully removed, pull out a feather and place it in the mouth; should it give a soupcon of soapy flavor, rinse again, but if it tastes quite clean, the bird is placed on an unlined poultry basket to drip, and the second cleanest bird goes through the same process and by the time that is completed the first one is ready to dry. The drying operation requires great care, but is equally simple; take the bird that has been washed firmly by the thighs and with a sudden swing hold it up in the air and it will stretch out its wings, and flourishing them about will shake itself several times. Then place it on the basket again upside down to obtain a firm basis, and gently rub with a towel from head to tail, then one more good shake and the bird goes to the fire. The birds should be placed tail first fronting to the heat, and should dry gradually. Turn the birds for the first two or three hours, so that no part may dry too quickly, and see that the faces do not catch from the heat. Should specimens dry too hastily their feathers will not lay straight. Unrendered beef tallow chopped into very small pieces and fed once in two or three days along with other feed puts a fine gloss on the plumage.—*Norwest Farmer.*

SNOW STORMS AND POULTRY.

Perhaps nothing is so convincing to a farmer that poultry raising is not intended as an occupation for women as a heavy snow storm. If he expects his hens to lay, he will do quite an amount of shoveling before he will clear off a suitable place for the hens to come outside. Nothing is more helpless when the ground is covered with deep snow than poultry. They can neither walk nor fly, and must remain where the snow finds them, unless they are assisted in their predicament. In one respect a snow storm can be made to serve a good purpose, for if a space next the door of the house is cleared away, and the snow that is removed be banked around the cleared space, a wall of snow is then formed, which serves as a windbreak, and makes a very comfortable snow enclosed yard, in which the hens may be kept as busy as when inside the poultry house, if the cleared space is first sprinkled with coal ashes and then covered with leaves, or cut straw, which should be removed should they become wet. The most critical time is when the snow melts, and then the poultryman must use his judgment in devising the best methods of drainage.

REFUSE FROM FACTORIES.

Refuse from the factories, such as brewers' grains, ground meat, etc., makes a cheap food for poultry; but the mistake should not be made of using such exclusively because of cheapness. It may not be always economical to procure certain foods because they are cheap, as the supply in the egg basket may diminish. The cheapest foods are those that induce the hens to lay. It is well, however, to use refuse material whenever it can be done, but it must be kept in view that the best results are obtained by feeding a variety.

KEEPING GEESE.

Unlike most other kinds of poultry, geese need but little attention except during the breeding season; and there is never any fear of the birds being starved, as they are able to keep themselves if they are provided with a grass run. Although fond of water, they do not indulge in swimming nearly so much as ducks; at the same time, a swim is necessary, at any rate, during the spring. If I were about to keep geese where no pool is available, I should arrange to make a large tank of some kind, either by brick work set in cement, or by excavating the soil as before, lining the sides with boarding, and puddling the back with good clay well rammed. A large tub may do, but as a rule geese prefer to visit the water daily during February and March. With regard to hatching, the earlier the better after grass becomes plentiful. April goslings make the largest birds, and are easier to rear than those which leave the shell a month later. Breeders on a small scale are scarcely likely to have any eggs to spare, but those who produce eggs for sale can usually offer them early in the year. The price is certainly higher, but the extra money is well expended. From four to five eggs are sufficient for a hen, and they are best set upon the ground. The goslings soon become a mass of dry fluff after they leave the shell, but should not be pressed to eat until twenty-four hours old. They may then be tempted to eat short pieces of sweet grass, or the goose grass or "hayriff," which grows along-side hedge-banks, as well as hard-boiled egg. If the food is sprinkled over the backs of the little goslings they will soon take notice, and after the first mouthful is swallowed there need be no more difficulty. They should be cooped with the hen on a grass-plot, and be encouraged to grow from the first. Geese are certainly profitable, particularly when they can forage for themselves along the road side, where the grass would otherwise be wasted. They are best disposed of, to my thinking, at Michaelmas, for then the greater part of the receipts will be pure gain, whereas if kept until Christmas they must be specially fattened, and the outlay in meal will have to be deducted from the rather larger gross returns. One must not go to the expense of buying a lot of pedigree eggs if he intends to kill the goslings in the autumn or winter. It will be sufficient to buy eight or ten choice eggs for the purpose of securing breeding stock, and they should be got from two distinct yards in order to get unrelated birds.—*Farm and Home.*

EGG FLAVOR DUE TO FEED.

There can be no doubt but that there is a difference in the quality of eggs, and frequently it is a very material one, says T. Greiner in *Country Gentleman.* But my taste is not discriminating, not refined enough, to enable me to tell by the flavor of the egg alone whether it came from a Leghorn, from a Langshan or from a Plymouth Rock, or whether it was contained in a white or in a brown shell.

Frequently we can tell by the flavor alone, however, when the hen that laid the egg has been feasting habitually on fish, or confined some time in a filthy barnyard. I would as willingly eat tainted meat as eggs coming from hens that have made their living largely by scratching in a heap of nasty, rotten manure, for we once had fresh laid eggs (manufactured largely from earth worms dug out of the manure pile) that proved their origin by the rankness of their smell, and had to be thrown away.

Recently I was asked by some one whether I thought an exclusive diet of grasshoppers would have injurious effect on the flavor of the eggs. This man evidently realized the bearing that feed has on the quality of meat and eggs. I imagine (so I told him) that grasshoppers, like locusts (cicadas), have a mild and inoffensive flavor. Locusts, we know, have been and are still largely utilized for human food by whole tribes and nations. It is not even necessary to go to ancient history, or to the story of John the Baptist for our authority. Was it not Dr. C. V. Riley who put our seventeen-year locust to a culinary test, and found it decidedly palatable?

The mere fact that grasshoppers and cicadas are a favorite diet with all kinds of birds, it seems to me, proves the inoffensive flavor of this food. In short, I believe that exclusive use of grasshoppers as raw material for meat and eggs must be productive of good quality. But on the whole, it looks reasonable that it is feed rather than breed that influences flavor and quality in our hens' eggs.

CROSSING LEGHORNS.

The crossing of two breeds is something that calls for good judgment. In crossing there should be an object. If two breeds directly opposite to each other in characteristics are crossed, the result may be antagonism, and the produce possesses no good qualities at all. Such an active breed as the Leghorn will make a better subject for crossing when mated with the Game, as the produce will be active foragers, and hold the uniform color. It is well enough to cross with a large breed (the Partridge Cochin preferred); the females of the cross should be mated with some kind of Game the next year. The Black Spanish does not serve so well for crossing with Games as will the Brown Leghorns.

DRY FOOD IN WINTER.

Ground food may be fed dry. The moist food is liable to become frozen, which renders it useless to the hens, and much of it is also wasted. All mixtures of ground food may be placed in the trough dry, but if the temperature is above the freezing point it may be slightly moistened. Chicks may also be fed on dry food exclusively.

YOUNG BROODS.

It is the cold, damp days that cause chicks to become chilled and droop, and the small coops and runs should be placed under a covered shed, so as to permit the chicks to stroll outside of the runs without being exposed to the weather. As they grow and become stronger, the runs may be placed on a grass plot, using the coops under the sheds for later broods.

DOGS EATING EGGS.

There is only one safe method of preventing prowling dogs from eating the eggs layed by the hens, and that is to break up all nests made by the hens outside of the poultry-house, leaving an entrance to the house sufficiently large for hens only to enter. The poultry-house is really the place for all nests, as the hens should not be compelled to seek other resorts.

HEAVY MALES.

In selecting males, never give the preference to size, as size may be due to fat and idleness, but aim to select one that is active and of medium size. Observation will enable you to make a selection without difficulty, but many persons are so partial to large males that they often sacrifice their interests. If the male is pure-bred, you will secure as large chicks for broilers as from one that is much larger.

TOO MANY LOAFERS.

Do not compel one or two good hens to support a dozen lazy ones. There are some excellent laying hens in all flocks. Select them, and place them where you can feed them as they should be, instead of throwing down food to be seized by fowls that give nothing in return. Hens that are unproductive and which are fat should be assigned to their proper place—the market.

TROUGHS IN WINTER.

Earthenware vessels easily become broken in winter, especially if left out at night with water in them. Wooden troughs, made tight and the bottoms tarred with wood tar, will prove better substitutes at this season; but they must be kept clean, or they will soon become slimy and filthy. Clean water is essential to the health of fowls, and the water should be changed frequently, as it is the source from which diseases are spread.

SHIPPING BROILERS.

They must be killed by sticking them in the throat, dry-picked, nothing being removed but the feathers. All the pin-feathers must be removed and the skin must not be broken. The crops must be entirely empty; hence, do not feed for thirty hours before killing. Pack in boxes and barrels without any packing materials whatever, and ship by express. Write to your commission merchant, and have all arrangements made before shipping, in order to prevent delay.

BROWN LEGHORNS.

A Brown Leghorn male should have a single comb, with five or six (five preferred) points, yellow bill and legs, black breast and reddish-bay hackle and saddle, each feather having a dark stripe down the center. There must not be a speck of white on a Brown Leghorn except at the base of the tail, the tail being black. White ear lobes are a feature, also. The plumage of the hen is dark brown, penciled with golden brown, the breast being salmon color.

DUCKS FOR LAYING.

The ducks that are retained for laying will not begin to lay until about February, and in the meantime they need only be kept in moderate condition. If made too fat, it will postpone the laying period, and the eggs secured will be infertile. They should be kept on grass at this season, with a small proportion of ground grain once a day. About January begin with a feed of meat at noon, which will induce them to lay regularly.

WHY SITTING HENS CEASE.

When a sitting hen abandons her nest there is always some cause, as the maternal instinct of the hen prompts her to remain closely on the nest even when starvation and death stare her in the face. When a hen abandons her nest it is well to look for lice, and the probability is that they will be found in swarms. Another cause in very warm weather may be the excessive heat, due to the location of the nest. In the summer the hen aims to select a cool place for incubation, and she should be so favored when the nest is selected for her.

FALL WORK.

The fancier or farmer who thoroughly understands and carries out a judicious system of management may laugh at dull times, writes Joseph Wallace, in the *Stockman and Farmer*. Nothing can take the place of good management at all times, but in winter especially the stock is wholly dependent on the kind or unkind attendant, and profit or loss is the result. When cold or cheerless November enters in advance of rigid winter, followed with strong and chilly winds, the humped-up flocks are found on the sunny and sheltry sides of outbuildings or stacks, whiling away the day in idleness, whereas if they had a comfortable place they would be moving about and converting food into flesh or eggs, besides barely keeping up animal heat.

It is well known to every observant and sensible person that heat is the active principle of life, growth and development. Life and activity cease in the vegetable domain when the degrees of cold reach a certain point. In a measure it is the same with domestic stock when vegetation is gone, the earth covered with snow, and it is only through liberal feeding and shelter that it maintains life. In winter a fowl or beast will consume more food than in warm weather, and as the degrees of cold increase a corresponding increase of food would be necessary to keep up animal heat. Now, as these facts are well known to everybody, why then do stock-raisers allow their fowls, cattle, horses, sheep, etc., to remain out of doors all winter? What are they raising them for? Is it for profit or pleasure, or merely inuring them to cold? It is good policy to waste a large amount of food to keep heat in the animal body? Is grain or fodder cheaper fuel than lumber? These questions the stock-breeder should ask himself in the fall, and if he prefers to have his stock "rough it" all winter, humped-up and shivering, without shelter, consuming a large quantity of food to keep life in them, in preference to comfortable shelter, good condition of body and saving of food, then he is lacking the quality of management and is utterly unfit to raise stock for profit.

To have hens put on flesh or lay more or less in winter they must have a warm place and be liberally fed on food which contains gluten, albuminoids and fat. It should be varied and mixed with some coarse kinds; that is, the grain food should be supplemented with roots, vegetables, bran, clover, slaughter-house offal, etc. Besides, such food is necessary to maintain health and activity, for when this condition is secured the egg functions usually resume the "shelling out" process without artificial stimulant.

Aside from the question of eggs in winter a warm and commodious house is a great saving of food. In real cold climates experiments go to prove that there is a saving of one-third, and in mild climates one-fourth, between the temperature of a warm shelter and exposure to wind and weather. Not alone in this do we notice a marked difference, but also in the looks and condition of the stock. Hardiness is the only quality one can say of them, but that is lost in the pinched features, the pale, wrinkled or frozen comb, the ruffled feathers, the stiff and benumbed limbs, the awkward movements and the entire absence of cheerfulness. How is it with their sheltered kindred if properly fed and cared for? Sleek, in good condition, proud and stylish, singing, scratching and coquetting all day on less food, and depositing in the nests the savings of kind and humane treatment.

ABOUT KILLING POULTRY.

Views as to the best mode of killing fowls differ, and the practice on general farms to chop off the head with a hatchet remains. On the broiler farms the French method of stabbing the bird in the roof of the mouth and plucking the feathers while the body is warm, is adopted as the quickest and best. When killing with the hatchet, as is generally the case in private families, the best way is to make a loop of a piece of string, which place about the fowl's head. Let one person pull on this while the executioner holds the bird's feet and the tops of the wings in his left hand. In the right hand he holds the hatchet. The person with the string now pulls the head over a block, and with one blow the executioner performs his task. The bird is then held until life is extinct. This prevents the bird from getting its feathers soiled. Some advise to perforate the neck and let the blood all run out before dressing. Others think the process of depletion renders the meat less savory than it would be if a portion of the circulation was retained in the body. The plan of breaking the neck was at one time generally practiced by dealers. It was claimed for this method that it not only gave a speedy death, but that the flavor of the flesh was better than when all the blood was drained out. The bird is taken by the legs and wings in the left hand, while the head is taken in the right, the body and neck being stretched to their extreme length, the head is then bent backwards and pulled at the same time. Dislocation takes place, and the body is held in the same position two or three minutes for the blood to run into the neck. Then, and not before, should plucking begin.—*Iowa Homestead.*

High scoring Barred Plymouth Rocks. Extra fine fowls for sale. L. W. PYLE, Bryn Mawr, Pa.

50 fine Ind. Game for sale, best stock, $1, $2 and $3 each. A. H. TYSON, Lansdale, Pa.

PIT GAMES only. Stamp for circular to D. L. LONG, Lock Box 5, New Martinsville, W. Va.

FOR SALE.—Buff Leghorns, S. S. Hamburgs, Cocks and P. Cochin. Prize winning. H. SHIPPY, McConnell, Ill.

TO EXCHANGE.—White P. Rocks for White P. Rocks or S. C. White Leghorns Write MALLIE ANDERSON, P. M., Taylor, Ill.

EGG DATERS. Outfit, $1.00. W. H. ELLIS, Box 301, Hammonton, N. J.

25 to 50 cents per dozen for your eggs the year round. C. O. DINGMAN, 18 Gansevoort St., New York.

FOR RENT.—Poultry Yards on Staten Island, one hour from New York City. $25 monthly. F. H. WALKER, 157 Broadway, N. Y.

BARGAINS. Cockerals for $1.50. May hatched Barred Plymouth Rocks, from prize winning birds. Cata. free. M. T. Orr, Harlem Springs, Ohio.

FOR SALE.—Fine Belgium or German Hares, 4 to 5 months old. 1 trio 15 months old. Send for prices. H. A. ROEDER, Hosensack, Pa.

CHOICE INDIAN GAMES from best strains, at bottom prices. THE HODGES CO., Box 73, Snow Hill, Md.

Fine lot young one-half Japs, April hatch, at $6 per trio if taken at once. IDE ROSSITER, Girard, Pa.

FOR SALE.—Impt. Prize winning Indian Games, also Red Pile and B. B. Red Pit stock. Cheap. Circular. GEO. L. BUELL, LORAIN, O.

CHOICE, pure-bred S. C. White and Brown Leghorns, White and Barred Plymouth Rocks, White Cochins, White and Black Minorcas, W. Wyandotes, $1 to $2 each. S. L. Hibberd, Lima, Pa.

FOR SALE.—Perfect Hatcher, 1,008 capacity. Eureka Incubator, 300 capacity; both as good as new, at a bargain. Write with stamp enclosed to A. C. KEEPERS, Latrobe, Pa.

"DIRT CHEAP." Bar. Ply. Rocks, Black Minorcas, W. Wyans., Part. Cochins, Lt. Brahmas, Buff Leghorns, White Wonders, Ind. Games. PENINSULAR POULTRY YARDS, St. Ignace, Mich.

SMITH BROS., True Girt Poultry Yards. Berea, Ohio. For sale Mammoth L. Brahmas, Indian Games, R. C. B. Leghorns. Golden and Silver Laced Wyandottes and Barred Plymouth Rocks, also 150 Stags, Pullets and Cocks. Kentucky Dominicks and Irish Black Reds, Irish and Mexican Grays. Every bird warranted dead Game. Eggs in season.

GREAT BARGAIN.—Eureka Incubator, 600 eggs. Prairie State, 300 eggs. Monarch pattern (home made case), 450 eggs. Three cost, $220. Bramhall Dean & Co., No. 2, heater, with 300 feet 1½ inch pipe, cost $125 to put up. $150 takes the entire lot. Must be sold at once. E. A. ROWE, Milford, Delaware.

WEBSTER & HANNUM.

Green Bone Cutter.

Cheap, Durable, Practical, Warranted.

Awarded 1st premium, Great Inter State Fair, Elmira, N. Y.; 1st premium, N. Y. State Fair, Syracuse, N. Y.; 1st premium and diploma, Western U. A. Agricultural Society; 1st premium, Tioga Co. Fair; 1st premium, Oswego Co. Fair; 1st and 2nd at Western N. Y. Fair, Rochester, N. Y. In strong competition. These are our winnings for September, 1893. Write for circulars.

Valuable Books Given for Securing New Subscribers at 50 Cents Each.

No. of Subs.		*Value.*
1	Hile's Book on Incubation	$ 25
1	Practical Caponizing	25
1	Standard American Poultry Book	25
1	How We Made the Old Farm Pay	25
1	Index to any Volume of POULTRY KEEPER	10
1	Poultry for Profit	25
1	Incubators and Brooders	25
1	Management of Young Chicks	25
1	"Poultry Keeper Special for 1887,"	25
1	"Poultry Keeper Special for 1892,"	25
1	Kendall's Horse Book	25
1	Temperance Volume	25
2	Complete Poultry Book	25
2	Diseases of Poultry	25
2	Breeders Egg Record and Account Book	25
2	Five Hundred Questions Answered	25
2	How to Tell the Age of a Horse	35
2	All About Broilers and Market Poultry	25
2	A. B. C. of Strawberry Culture	40
2	American Corn Husker	55
2	Knitting and Crochet	50
2	Indian Game	20
2	Moisture Guage	20
2	Willis' Veterinary Practice	55
2	Chicken Marker	25
2	Practical Poultry Keeping	50
2	Natural and Artificial Duck Culture	50
2	Silos and Ensilage	50
2	Small Fruits and Poultry	30
2	Fisher's Grain Tables	30
2	Scribner's Lumber and Log Book	35
2	How to Select Cows	50
2	Standard and Commercial Poultry Culture	1.00
3	Ladies' Home Journal	1.00
3	Gentleman's Long Leather Pocket Book	75
4	Kidder's Secrets of Bee Keeping	75
4	Mrs Parker's Complete Housekeeper	1.50
4	How to be Your Own Lawyer	1.50
4	The People's Doctor	1.50
4	Everybody's Paint Book	1.50
5	Compendium of Cookery	1.00
5	Affleck's Farmers Record and Acc't Book	3.55
6	A. B. C. of Bee Culture	1.20
6	American Standard of Excellence	1.00
6	Philosophy of Judging	1.00
6	Guenon's Milch Cows	1.00
10	Cruden's Unabridged Concordance	2 00
10	Polyopticon	2 50
12	Blakelee's Cyclopedia	3.00
12	Caponizing Set	3.00
12	Webster's Unabridged (Reprint) Dictionary, (full sheep bound)	2 50

MANN'S BONE, VEGETABLE, AND CLOVER CUTTER FOR POULTRY FOOD,

$10.00 is the price of the Our new combination cutter. SIMPLEX Automatic, self-adjusting feed, leaves both hands free to work. $10.00

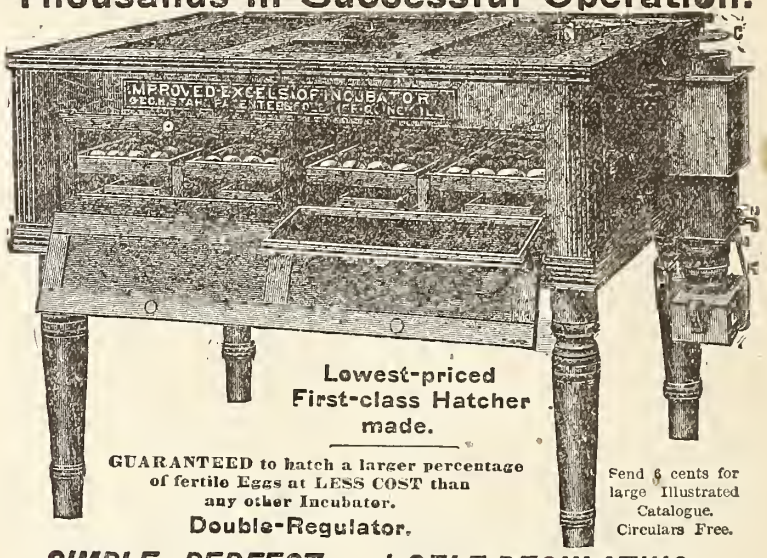
It will cut bones or vegetables FOUR TIMES AS FAST as any $12.00 Bone Cutter on the market and it is also an excellent Clover Cutter. Any boy can run it; it cuts fine, fast and easy. Fully warranted for one year. Catalogue free if you mention this paper.

F. W. MANN CO., Milford, Mass.

HATCH CHICKENS BY STEAM.

THE IMPROVED EXCELSIOR INCUBATOR WILL DO IT.

Thousands in Successful Operation.



Lowest-priced First-class Hatcher made.

GUARANTEED to hatch a larger percentage of fertile Eggs at LESS COST than any other Incubator.

Double-Regulator.

Send 6 cents for large Illustrated Catalogue. Circulars Free.

SIMPLE, PERFECT, and SELF-REGULATING.

GEO. H. STAHL, QUINCY, ILL.

PATENTEE AND SOLE MANUFACTURER.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address ELK ISLAND POULTRY CO., Island P. O. Goochland Co., Virginia.

B. B. B. Barred Plymouth Rocks, the finest bred in the west. Br Legs, Black Legs. Show and breeding birds of above varieties. Oak Lawn Poultry Farm. Ypsilanti, Michigan.

Poultry and Dairy Farm for Sale or Rent, near Sea Girt and Spring Lake, N. J. For particulars, address ROBERT M. MORTON, 31 W. 65th St., N.Y.

At Phila. 10 premiums on 9 entries, 7 Grand S. C., 5 R. C. Leghorn cockerels scoring from 92 to 95 honest points, for sale. W. P. Rocks scoring to 96. Pullets. W. W. Kulp, Pottstown, Pa.

White and Black Minorcas, Barred Plymouth Rocks and White Wyandottes. Stock at all times. Eggs in season. WM. J. SCHAUBLE, Erie, Pa.

Leghorns and Beagles. R. C. W. and Brown and S. C. Brown and Buff Leghorns and S. S. Hamburgs. 6 Beagles, 5 mos., from Reg. stock, for sale. H. J. BROWN, Harford, Cort Co., N. Y.

Pine Tree Farm, Jamesburg, N. J. Ind. Games, Brahmas, Leghorns, P. Rocks, Wyandottes, White Turkeys, White Guineas and Antwerp Pigeons. Mammoth Pekin Ducks a specialty. Send for Cir. W. H. Ordway, Prop. D. A. Mount, Supt.

CLEAR GRIT FOR POULTRY.

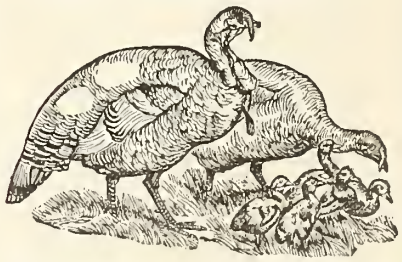
Send stamp for sample. D. LINCOLN ORR, Supt. ORR'S MILLS POULTRY YARDS, ORR'S MILLS, N. Y.

HATCH YOUR CHICKENS!

Brood them with the IMPROVED JUNIATA INCUBATOR AND BROODER.

The latest improved hatcher in the world. *Reliable, Perfect, Self-Regulating.* Heated by a radiator. The most scientific incubator made. Guaranteed to hatch perfectly. KEARNS & ALEXANDER, Send 4c. for Catalogue. Yeagertown, Pa.

HOW TO RAISE TURKEYS!



The numerous diseases that are usually prevalent among very Young Turkeys, may be prevented by the use of

CARY'S PILLS.

Send for Circular. E. FOUGERA & CO., 30 North William Street, New York.

"Everything For The Poultry Yard."

Poultry and Supplies

MOST COMPLETE STOCK IN AMERICA.

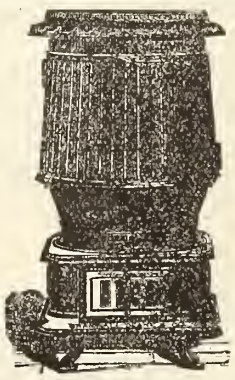
PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.

Our Breeds:—L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.

Do You Want Our Catalogue?

50 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.

MICHIGAN POULTRY FARM, Geo. J. Nissly, Prop. SALINE, MICH.



BROODER HEATERS

The only successful Heater made. Used by all poultry raisers.

Send for Circular

BRAMHALL DEANE & CO.,

264 Water St., N. Y.

83 Market St., Chicago.

A POULTRYMAN'S LIBRARY.

Low Cost Poultry Houses, illustrations of Poultry Buildings with actual cost, (a new book). *Price 25c.*

500 Ques. and Answers in Poultry Keeping. *25 cts*

Pigeon Queries, book for Pigeon Fanciers *25 cents.*

The Fanciers' Review, a large 16-p. monthly 50 cts a year, two years 75 cts. Printing for Poultrymen. Address Fanciers' Review, Chatham, N. Y.

IMPROVED PEERLESS HATCHER

Sold under a guarantee that it is positively self-regulating and will hatch fully 80 per cent. of fertile eggs, or it can be returned and money refunded. Reasonable in price. Self-regulating Brooders. Send 4 cents for catalogue. H. M. SHEER & BRO., Quincy, Ill.

For Sale, less than cost. New Poultry Keeper Incubator. Latest improvement. Never been used. GEO. L. PRATT, Ridgway, N. Y.

S. S. Hamburgs and S. C. B. Leghorns. Superior young stock; prices low. A. L. Cary, Lewis, O.

Ind. Games, stock of Superb Chicks for sale, at living prices. **A. J. MOWRY, Milan, O.**

White and Bl. Langs., Buff and Wh. Cochins, Ba. P. Rk's. Stock and eggs. S. L. Farrar, Bath, Mo.

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

200 B. Turkeys from 18 to 24 lb. hens, 40 lb. tom. JOS. W. FLEMING, Buckingham, Ill.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

Jumbo I. Games. Frayne, Champion and Agitator strains. Cir. P. O. Hopkins, Hannanshurg, O.

L. Brahmas, choice stock. 19 hens and 1 cock for $45. A. N. Doane, Gainesville, Wyo. Co., N. Y.

Black Minorcas. Twenty selected cockerels, at $1.50 each. O. K. PINNEY, Calkins, Pa.

For Sale.—Fowls and Chicks, 6 varieties. Incubatoreggs. Stamp. J. P. Hellings, Dover, Del.

4 Dollars a Trio. Leghorns, White and Brown, R. and S. C. Forsyth and Tyler strains. Cir. H. B. PINNEY, Calkins, Pa.

300 fine S. C. B. Leghorns and B. P. Rocks. Cockerels and pullets for sale. Circulars free. S. K. MOHR, Hilltown, Pa.

A. RISLEY MILLER, Praxton, N. Y. B. and W. P. Rock, W. Wyandottes and Red Cap cockerels. Very fine. Write for wants.

FOR SALE.—Cornish Indian Games, Barred Plymouth Rocks and Mammoth Bronze Turkeys. J. H. HELMS, Centreville, Ind.

BIG LAYERS. Rose Comb White Leghorns. L. N. LIGHTY, East Berlin, Pa.

BUFF WYANDOTTES FOWLS, PLYMOUTH ROCKS. Bargains. Write J. D. WILSON, Worcester, N. Y.

White Fowls. Stock for sale, cheap. W. Polish, W. Cochins, W. Leghorns, bred from prize winners Cir. free. Geo. A. Friedrichs, Erie, Pa.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear rabbits.

Prize winning S. and W. Wyans., I. Game and P. Ducks. Stock and eggs for sale, send for Cir. M. H. LEIDY, Blooming Glen, Pa.

BEATTY'S PIANOS and ORGANS $33 up. Want agt. Cat'lg. Free. Address DANIEL F. BEATTY, Washington, N. J.

Low Prices.—Eggs in small or large quantities, also stock. S. C. W. Legs and W. Wyans., Knapp St., cross b'ds for br'ls. B. H. Noxon, Elm St., Ithaca, N. Y

Buff Legs., Bu P. Rks., I. Gms., Bl Mins., P. Rks. P. D'ks. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

W. C. MYER, Madison, Wis. Lt. Brahmas; B. P. Rocks; B. Langshans; P. Cochins. Young stock. Write for prices and description.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks, choice Cockerels $2 to $3 each. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. D. M. POLING, Van Wert, Ohio.

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

Webster & Hannum. Cutter works first class. Any one doing business with Webster & Hannum will find them up to their word. E. W. BROWN, Jr., Old Mystic, Conn.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any Incubator. 2 cent stamp for circular. H. D. MOULTON, Taunton, Mass

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Phillimmon strains. P. H. Jacobs, Hammonton, N. J.

Sweepstakes at Chicago, 1891 B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. F. M. MUNGER, DeKalb, Ill.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy, Boericke & Tafel, 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. Oldest Homeopathic Pharmacy. Established in 1835. *The Poultry Doctor*, 85 pp., 12mo, cloth, 50 cents.

Spratts Patent

Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N. Y

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in sea. Cir. W. A. Williams, Route City, Ind.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. B. A. FOX, Richmond, Va.

Northup's Black Minorcas. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. CHARLES RIVER POULTRY YARDS, Newton Lower Falls, Mass.

BIG BARGAINS! In order to make room for our growing chicks we will sell for less than half their value 100 P. Rocks, 50 Lt Brahmas and 25 Mammoth Bronze Turkeys. J. F. Barbee, Millersburg, Ky

LIGHT BRAHMAS. Heavy winners at Bloomington, Ill., Dec. 1892, and Indianapolis, Ind., Jan 1893. Stock for sale. ALFRED DOYLE, Morgan Park, Ill.

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Langshan fowls and eggs for sale. Circulars free. G. W. PRESSEY, Hammonton, N. J.

Now is the time to order your Sheep and Beagle Dogs. I have some extra fine Hampshiredown Ewe and Buck Lambs for sale also Poland China Pigs and broken Beagle Dogs, variety of Poultry. Stamp for Cir. A. Elwyn Strode, West Chester, Pa

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To J. L. CAMPBELL, West Elizabeth, Pa. This ad is good for $5.00 part pay for an Eureka Incubator

LEARN TO CAPONIZE INSTRUCTIONS MAILED FREE WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.

350 BARRED PLYMOUTH ROCKS Trio, $3.00, $3.50 to $4.00 for best breeders. Best cockerels, $1.50. A. O. ROBERTS, Atlantic, Iowa.

BUY THE BEST. The improved Monitor Incubator. Hundreds of Testimonials from all parts of the world as to its merits over all other makes. Large book with cuts for stamp. Address A. F. Williams, Bristol, Conn.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.90, postpaid. They make handsome and valuable books. Address Poultry Keeper Co., Parkesburg, Pa

EGGS. 70 varieties of the finest lot of land and water fowls in the United States. Fowls for sale in all varieties. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, J. R. Brabazon, Delavin, Wis

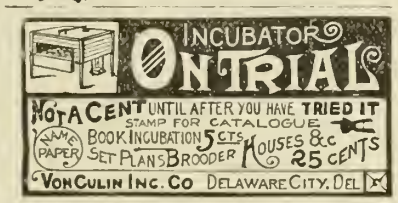
GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the $5 HAND MILL (E. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also POWER MILLS and FARM FEED MILLS. Circulars and testimonials sent on application. WILSON BROS. Easton, Pa.

MAPLE FARM DUCK YARDS.

The Largest Duck Farm in America

Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices JAMES RANKIN, South Easton, Mass.

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.



NEW BLOOD! You will be left if you put it off till spring, to buy a W. F. B. SPANISH COCKEREL. Price and my photo free. JOHN BENNETT, Sunman, Ripley Co., Ind.

CHOICE STOCK FOR SALE

after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH, Utica, N. Y.

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. Always safe and reliable. Free from smoke and soot and more convenient and economical than any other. Manufactured by L. R. Oakes, Bloomington, Ind. Sold at Topeka, Kan. by J. P. Lucas; at San Francisco, Cal., by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

THE BEST POULTRY FENCES,

Galvanized Wire Nettings,

ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.40 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ Inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.

PETER DURYEE & CO., 215 Greenwich St., N. Y.

SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet with Coating, Caps and Nails. Sample and circular free. A. F. SWAN, 38 Dey St., N. Y.

The Prairie State Incubator

takes the Three First Premiums at the Great New York Show, Madison Square Garden, February 24th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $20.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator.

Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are used by the largest breeders in the United States. Address for eighty page catalogue.

ALL MACHINES WARRANTED.

PRAIRIE STATE INCUBATOR COMPANY,

Homer City, - - - Penna

How To Make Money WITH A FEW HENS

Is the Teaching of

FARM-POULTRY.

A Live, Practical Poultry Raising Guide.

It is acknowledged to be "The Best Poultry Magazine Published" in the world.

Send for Index to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. Subscriptions can begin with any back number you desire.

Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? Do you care to learn how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "What has been done, can be done again." Remember the price; 50 cts. one year; six months 25 cts.; sample free. Remit cash or stamps. I. S. JOHNSON & CO., Boston, Mass.

BOOM THE LEADERS!

The two best poultry papers on earth are

FARM POULTRY..... 50 cts.
and
POULTRY KEEPER..... 50 cts.

We will send both, for one year, for only 70 cts.

I. S. JOHNSON & CO., Boston, Mass.

ONLY $1.10! CANNOT BE EQUALED!

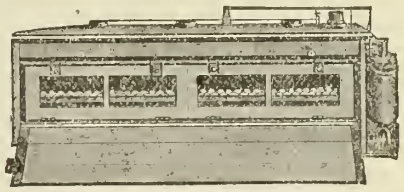
FARM POULTRY (Monthly)..... 50cts
POULTRY KEEPER (Monthly)..... 50 "
FARM and FIRESIDE (Semi-Monthly) 50 "
MODERN COOK BOOK..... 50 "
Total..... $2.00

All sent postpaid on receipt by us of cash or stamps, $1.10. Sample papers free. Address

FARM POULTRY, Box F. P. BOSTON, MASS.

BONE AND SHELL FOR POULTRY.

Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The lime or oyster shells furnishes shell material. The *granulated* size is for *adult* fowls; the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address FITCH FERTILIZER WORKS, BAY CITY, MICH



Won at Madison Square Garden, 1892. 1st prize of $25 in gold for largest and best batch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR, 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular. Jas. Rankin, South Easton, Mass.

We are So Anxious That you should see our new circular on

Poultry Supplies.

It illustrates the most complete line ever offered. FREE

Johnson & Stokes, —SEEDSMEN— 217 & 219 Market St., Phila., Pa.

100 Rabbits, Belgain Hares, Guinea Pigs, Partridge Cochins, Wyandottes, and Golden Seabright Bantams. A. B. Wingert, North Hampton, O.

KNAPP BROS.

ARE HEADQUARTERS FOR AMERICA'S LEADING STRAINS OF PURE STANDARD

WHITE LEGHORN AND WHITE WYANDOTTE FOWLS.

Proof—The records at 29 of the leading shows during the past ten years—Highest Honors every time. We sell annually hundreds of Exhibition and Breeding birds but never at any price, our best tested breeding stock, $400 in one order at a recent sale, for 18 show birds. OUR MATINGS for season of 1893 are made up having full benefit of our long experience and include the tested breeding stock that produce sure winners and best egg producing strain known. Many of our customers report similar success. We can furnish B. R. Knapp's strain of Rose Comb White Leghorns or eggs direct from his yards. 100 fine breeding Cockerels, separate or mated up in pairs, trios or breeding pens to suit customers, at reasonable prices for quality. EGGS for HATCHING from our choicest matings, at $3 per 13, $5 per 26, $10 per 65. By the hundred for incubators from well mated stock, $2. Reduction on large orders. Send stamp for illustrated catalogue. Address

KNAPP BROTHERS,

BOX 501, FABIUS, N. Y.

LIKE WILL BEGET LIKE."

700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by "Ajax," "Leo," "While Prince," "Cody," "Sir Henry" and "Alexas," the grandest specimens of these varieties owned in America to-day. At New York, Feb. '90, won 4 grand Gold Specials, 8 firsts and 9 seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

BONE MEAL FOR POULTRY. Crushed Oyster shells, Flint and Beef Scraps. Send for new price list. YORK CHEMICAL WORKS, York, Pa.

Wanted at once.—Buff Leghorns, Ind. Games, Buff P. Rocks, Buff Wyandottes, Minorcas. Address Box 32, Washington, N. J.

F. R. MINNER, Bechtelsville, Berks Co., Pa., has for sale cheap (if taken at once) Buff Leg., S. S. Hamburgs and Indian Games.

LADIES!! Why Drink Poor Teas?

THE GREAT AMERICAN TEA COMPANY

When you can get the Best at Cargo prices in any Quality, Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums given to Club Agents. Good Income made by getting orders for our celebrated goods. For full particulars address THE GREAT AMERICAN TEA CO. P.O. Box 289. 31 and 33 Vesey St., N. Y.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

How Much Feed Per Day.—How much feed per day should be given to one hundred Leghorns to keep them in good laying condition?—G. F., Phila., Pa.

About ten quarts per day, but much depends on the kind of food given.

Several Questions.—1. How many cocks will it require for a flock of one hundred hens? 2. Which is the best food required for laying hens? 3. Could you give me dimensions for a good, warm hen-house that would not cost a great deal? 4. Is lime good to keep lice from the hen house?—E. R. K., Argo, Colo.

1. Ten. 2. Meat and bone. 3. See July, 1892, issue of POULTRY KEEPER. 4. Yes.

Changing the Males.—Is it best to change roosters every year?—L. W. S., Malvern, Ark.

Yes.

Leghorns.—Are the Leghorns the best layers?—E. M., Oakdale, N. Y.

They are equal to any.

Sheep.—Please give me the address of some reliable paper on sheep raising, and of a reliable person who raises sheep?—C. A. T., Gladys, Va.

Address "Wool and Mutton," Minneapolis, Minn.

Geese.—Which breed of geese would you recommend to me?—C. H. S., Jr.

The Toulouse or Embden.

Broilers.—How early should we have broilers ready to ship and which would be the best market for them?—Mrs. J. E. S., Middlesex, N. Y.

They should be ready by January. The best prices are in April or May. They are shipped to all of the large cities.

Wyandottes.—What is the difference in color of the White and Silver Wyandottes?—L. C. J., Council Bluffs, Iowa.

The one is pure white while the other is white and black, with spots or centres on the feathers.

Address of Paper.—Please give me the address of the paper entitled "Incubators and Brooders."—A. H. S., Dakota.

There is no such paper. We have a book by that title.

Feeding Ducks.—Is it necessary to feed Pekin ducks, both old and young, on soft food, and what can be done to prevent your chickens from crowding each other when taken from the mother and put in a brooder?—Mrs. C. C. C., Rockville Centre, N. Y.

Ducks prefer soft food and thrive best on it. To prevent chicks from crowding, they should be kept warm.

Minoreas.—Do you consider the Black Minoreas the best birds for laying purposes?—F. C. A., Rockmills, Md.

They are fully equal to any.

Brahmas or Plymouth Rocks.—Which do you consider the better for an all purpose chicken, Light Brahmas or Plymouths?, Which for broilers especially?—P. G. C. Mascontah, Ills.

Either breed would answer, as they are equal in all respects.

Rats.—What will drive out, or keep away, rats which infest a house in which I keep young chickens?—C. P. P., Elgin, Ill.

We know of no sure remedy for rats. We would like one ourselves.

Worms.—What is the cause of worms in chickens, and what will cure them?—G. W. T., Sidney, Ill.

Worms are caused by eating filth in some shape. Feed the hens once a day on cornmeal, putting a teaspoonful of spirits of turpentine in each quart of the meal and moisten it as dough.

Chicks in the Brooder.—How long should young chickens be kept in the brooder?—F. S. L., Maple Park, Ill.

Until well feathered—about eight weeks.

Animal Meal.—Will animal meal answer in place of fresh meat?—J. H. McK., Viola, Fla.

We use the animal meal. It takes the place of bone.

Black Leghorns.—Is there a breed of chickens called the Black Leghorns? Would saw dust be good to put on the bottom of the poultry house?—Dr. J. R. G., Spring Mills, Pa.

There is a breed of Black Leghorns. Do not use sawdust on the floor of the brooder house, as the birds may fill their crops with it.

The New Standard.—When will the new Standard be published, and also the price of it?—S. R., Springfield, Md.

The new Standard will not be out before 1896.

Chicks Dying.—What is good for chickens that droop and their heads become black? Little chicks the same?—W. E. McK., Sidney, Pa.

Look on their heads for the large lice. Your symptoms, as described, apply to all diseases.

The Markings of a Leghorn.—I wish to select my best cockerels for next year's breeding, and sell the balance. I have White Leghorns. Please give a full description of a good head and comb, and also how many prominent points in the comb.—W. R., Annapolis, Md.

The comb of a White Leghorn male should be as follows: Five points, bright red, perfectly straight and upright, and free from warts or excrescences. That of the hen should fall over to one side. Plumage of birds must be pure white. Legs yellow, earlobes white or creamy white, beak yellow, face red, eyes red.

Blood.—Please let me know if fresh blood, from the market, is good for chickens to eat?—E. S.

It will not injure them and may be used freely, especially if cooked by mixing with ground grain.

Black Leghorn Markings.—I have four Black Leghorns and one cockerel, prize winners. They have blue legs. I also have one cockerel with yellow legs. Which is the standard color?—E. P., Grand Rapids, Mich.

Legs should be yellow or yellowish black.

Hamburgs.—I have a trio of Silver Spangled Hamburgs, home-hatched sixty-eight young chicks, but not a Hamburg have I raised. The eggs hatch well, but the chicks live only a short time?—B. C., Higginsville, Mo.

Hamburgs feather rapidly and the chicks are delicate, being hard to raise and in this country very difficult. They are too closely inbred, as but few breeders have them.

Strains for Leghorns.—Are there two strains—a large and a small one—of Brown Leghorns. If so, which is considered the better?—W. J. S., Beaver City, Neb.

There is only the one strain.

Eggs for Shipping.—Please inform me of the best method of packing eggs to ship for incubators. Would wheat or corn chaff, if dry, prevent eggs from hatching.—E. J. B., Yellow Springs, Ohio.

To ship eggs wrap each egg in tissue paper, and pack in oats, in the box. Wheat chaff is not injurious.

CORN AND FAT HENS.

The following excellent article by Mr. R. W. Davison, Glendola, N. J., appeared in the *American Fancier*, and, though full of compliments to us, is given here because we believe it will be found valuable. Mr. Davison is not only an experienced breeder but also one of the most progressive. His letter is in reply to one written by Mr. Riggs, of Texas. Mr. Davison says:

An exchange of ideas is wonderfully helpful to poultry raisers, as indeed it is to any class of men. In discussing corn as a feed for laying hens it is not my intention to belittle what C. R. Riggs had to say in September 9th issue of the *American Fancier*, yet I will partly use his article as a foundation.

I do not intend to fight Prof. P. H. Jacobs' battles for him either; as he is far more than a match for any man who attempts to kick at his theories, or facts, as I have found most of them to be. Certain it is that no one man has done more for the industry than he. Some of his discoveries have been rather startling at times and every old fossil has considered it his duty to kick; only to be swallowed up in the flood of facts and public opinion. I never lived in Texas, so can't say what effect corn has upon hens in that large and far off province, but here in New Jersey corn won't make eggs to any extent. I believe I am far enough away from Hammonton so that my hens don't feel the direct influence of brothers Jacobs and Boyer, yet indirectly that might be the case as the POULTRY KEEPER and the *Fanciers' Journal* are regular visitors to my establishment.

I have never seen in the POULTRY KEEPER that hens should be starved if eggs are wanted, except, perchance, it was recommended to reduce over amount of fat. Hens should always be kept in good condition. Poor hens are, generally speaking, poor layers and over fat hens are the same. There is a vast deal of difference between plump hens and over fat ones. A friend of mine, in speaking of Plymouth Rocks and their inclination to produce more fat than is good for them, said he killed one a few days previous. She had not layed for several weeks and he therefore thought she was more profitable to eat than to be eating good sound *corn*. He found upon opening her that her reproduction organs were covered with fat; in fact she was literally covered with fat inside and out. She had a nice cluster of undeveloped eggs but it was simply impossible to force those eggs along the egg passage. She didn't want to set because she didn't lay. In time she might have layed a few misshaped eggs providing she kept her health, which is doubtful. Over fatness is not a normal condition whether in bird or animal.

Mr. Riggs' Wyandottes, with their infertile misshaped eggs, are a mystery to me and have not been my *experience*. When my hens get so fat as to lay misshaped eggs I usually prepare to break up a lot of setters, although other causes than fatness may induce hens to lay misshaped eggs at times; also the age might have had some effect. My experience does not include hens of uncertain age, as I never keep a hen over the third winter and seldom over the second winter. A hen will lay more eggs during the first year and a half of its existence than during any succeeding year. A brother fancier of mine had a flock of thirty-five Brown Leghorns. Don't tell me they had a drop of impure blood in their veins, Mr. Riggs, for if they were not pure so Leghorn is. They were fine birds from the best of stock, and nearly all prize winners themselves or their parents were. Nearly every year one or more would become broody and he actually set several and they raised their brood. In every case the hens that became broody were over fat. It makes no difference whether from the excess of corn or not, only as every one knows corn will produce fat quicker than almost anything else. Last week I discovered a Silver Spangled Hamburg hen caring for a batch of chicks that she had hatched—having stolen her nest—don't tell me she was not pure, Mr. Riggs, for I won't believe you. I am no chicken in the hen business, thank you, and I think I can tell impure blood, after several generations at least. This hen is fat even after her three weeks' set and scanty food. There is no use in citing examples where non-setting breeds have been made to sit or where setters have been made almost non-setters through feed alone. Messrs. Jacobs and Boyer have repeatedly given such examples or facts and yet Mr. Riggs has never had such experiences. Strange things often happen down in Texas, we are told. I would like to ask why farmers generally grumble because their hens don't lay good and continually want to sit?

It is a rarity to find a poor hen on a farm and how can it be otherwise when corn is fed liberally year in and year out. Why is it that farmers, in a great many instances, have to buy eggs during the winter season? Surely if corn will make eggs he is just the man to have plenty.

My father keeps about forty hens. They have unlimited range with plenty of corn night and morning. These fowls have a good warm roost and plenty of room, but from two to ten eggs a day was the rule all last winter. I keep my fowls yarded, winter and summer, in flocks of fifteen each. During the winter I fed whole corn (at night only) about two days per week, *i. e.*, whenever the weather was extremely cold. Now one of these flocks of fifteen layed two or three times more eggs than my father's forty and I didn't have as many setters. Why? Because my fowls were not as fat as my father's. Mr. Riggs says more than half of his hens, when they became broody, were poor. Strange, isn't it? If he feeds his hens well, as I presume he does, I don't see what he is doing with so many poor hens. I feed my hens liberally (no corn though) and they are in good condition, with once in a while a fat one or bordering in over fatness. I have noticed that the majority of my setters are fat. I argue this wise (I think Mr. Jacobs means the same) that the majority of hens that want to set are fat but for all that we will occasionally find a poor one that has the fever very bad. There are exceptions to all rules. About July 1st I ran out of wheat and oats, but had plenty of corn, so concluded to keep on with the regular mixed morning mess, but feed whole corn at night. I hadn't fed the corn long before my hens began to drop off in laying and come up in setting. Two weeks ago I stopped the corn and fed wheat, oats, and rye—feeding wheat about three nights to oats or rye one night. In a week's time my hens began to gain and are now laying fairly well, although they are all more or less moulting.

Mr. Riggs' over fat Wyandottes have illustrated a point I have often made that over fatness and fertility do not travel the same road. Because one man has made setters of Leghorns or Minoreas and another man never has been able to do the same we must not conclude that this or that man lied. Conditions and the method of feeding may have something to do with the results. I believe hens running at large, especially the Mediterranean class, will not fatten as readily as those confined. I also believe that fowls of this class will seldom, if ever, become over fat when running at large. I also believe that Mr. Riggs' four Minoreas are not over fat, for the simple reason that they are very active, and having more than an abundance of feed they have become disgusted with all such stuff, and if he should open the crop at night—or perhaps he could tell by working the crop of the live fowl with his fingers—he would find more grass bugs and trash therein than corn meal or sorghum seed. Of course if he stopped feeding, or largely reduced the feed, his fat Wyandottes would stop laying. The starving plan wasn't carried far enough. If he had starved those hens down to their proper weight or below it and then have fed judiciously for eggs, the birds would have layed more regular shaped eggs and probably fertil ones, and also, without doubt, more of them.

I think Bro. Riggs should carry his experiments in new fields, but, as I said before, Texas and New Jersey are far apart. It is very evident that the treatment of laying hens will not work the same in the two States. The less corn feed and the more exercise my hens have the more eggs I get.

If hens are starved they cannot be expected to lay. The object is plenty of food without an over supply, and given in such a manner as to induce activity, and I think you will find this to be the substance of Bro. Jacobs teachings. If too much food is given, especially corn, and thrown down so the fowls can walk up and eat their fill, at once the result will be very disastrous as far as eggs are concerned. If Mr. Riggs would take four Brahmas or Cochins and put them in the half-acre lot with the chicken feed and sorghum seed the result will be far different from what they are now with the Minoreas, providing they did not tire of the chicken feed and seed. It would be well for him to try the experiment. The nature crank is a great pest, and he often tells us great and wonderful things which figure far better on paper than in actual experience. Mr. Riggs might have brought up the ostrich, or a certain breed of wild turkeys, as purely non-setters as well as his blackbird, but that don't settle the question of Brown Leghorns as they were first found in their natural state. The Brown Leghorn of to-day is a made breed, we might say, the non-setting qualities being bred in them just as much as color and shape. The breed has always been noted for its activity, even as first imported, yet when the statement is made that they were originally as cute and knowing as the Texas blackbird it makes me smile. But probably Mr. Riggs did not intend so much, or, if he did, he can doubtless tell us just what little fellows hatched the eggs and dealt out the juicy worm (or was it corn?). If every other hen on my place proved to be a persistent setter I would not abandon the use of my incubators. I consider the hen a very obliging machine as long as she continues to lay nice fertile eggs but that is as far as I want her to go. I rather attend to the hatching myself, as I don't care to have my eggs used as a dancing platform or to have the big foot of a hen gently rest on a newly hatched chicken's head. No thank you; I'll take the machine every time. I wish to gracious some one could manufacture fertile eggs. It would save an awful lot of hard work and cuss words. I don't know as that would do either, for everybody would go in the broiler business and the bottom would drop out of prices. Nature furnishes the foundation and man develops the qualities, so that all things works together for good to the poor bummer who pitches in with sleeves rolled up and with a determination to dig out a living or bust.

AN EGG RATION.

Food rich in the nitrogenous elements will always induce the hens to lay if they are in good condition. It is important that the hens be kept in exercise, as it promotes the appetite and better fits them to lay. An excellent food for this purpose is equal parts of bran, ground oats and corn, and to each quart of the mixture add a gill of linseed meal. Scald it and feed to twelve hens. Give a pound of meat to twenty hens twice a week. Feed twice a day.

SEND two stamps to P. H. Jacobs, Hammonton, N. J., and get plans for an incubator.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being compleded we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum. sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

Vol. X. PARKESBURG, PA., DECEMBER, 1893. No 9

CONTENTS.

Poultry-house With End Windows, (Illustrated) —Confinement and Corn—Warmth and Eggs —Size and Space. 129
Experiments With Turkeys 130
Mr. Bennett's Shipping Coop, (Illustrated)—Packing Broilers. 131
Self-Feeder for Young Chicks, (Illustrated)—Testing Eggs—Duck Culture South—Tarred Paper or Shingles 132
The Egyptian Plan: Other Hints—Roosts and Lameness—Breaking up a Hen is Cruelty—Mr. Wheeler's Experiments—Roup, a Remedy —Black Javas—Edward Atkinson's Theories—Moisture and Eggs. 133
The Light Brahma, About Feed—Fresh Meat Does the Work—A Keg Drinking Fountain, (Illustrated)—This is the Genuine Roup—Lots of Lice—Brief Remarks from Readers: For Mr. Johnson, Lost Lots of Time, Making a Hen Broody, From a Small Beginning, A Sure Cure for Scaly Leg, Small Eggs, Three Times a Day, How He Got Good Hatches, Eggs by the Car Load—Only a Cent a Week—A Long Distance Hatch—Slaughter by Dogs—Poultry House—It Don't Seem Possible—Black Javas —His First Experience—A Thermostat—Minorcas. 134
Uncle Mike on Hamilton—A few Inquiries—Can't Raise His Chicks—Warts or Sores on The Heads—A Large Establishment—Cellar for an Incubator—What is the Matter?—Homœpathic Remedies 135
Editorial Items—Clubs and their Uses—Judges by Trade—Vindicated—McFetridge's Book on Poultry—Mr. Felch and the Decimal Association—Mr. Boyer and Cross-bred Fowls—All About Broilers—A Physician on "Fresh Air" 136
Missouri State Poultry Show—Profitable Poultry Farming—Broken Flint and Lime—Keep the Floor Covered—Mentionings—Poultry at the World's Fair. 137
Wind-Break Fences, (Illustrated)—Broilers in a Room—In-breeding of Turkeys—Some Facts About Linseed Meal—One Pound Extra—Rats Driven Off—Making a Living from Hens—Carelessness in Mating—Plenty of Sunlight—Dampness and New Houses—Position of Windows—Swapping Eggs—A Cheap Fence for Ducks. 138
Why Poultry Don't Pay—Fattening Poultry—Ventilating Poultry Houses in Winter—This and That—Points of Light Brahmas—Plums in the Chicken Yard—A Point on Fresh Eggs 139
Eggs for Select Customers—How Many Fowls Shall I Keep?—My Cure for Roup Fumigating a Poultry House—Mistakes—Composition of Corn—The Farm Flock—Red Spider Lice —Clover as Food for Fowls 140
Poultry at the World's Fair (Continued from Page 137)—The Atlanta Show—Owls and Hawks 141
Advertisements. 142
Advertisements 143
Bureau of Information—Chloroform in the Poultry Yard—Science as is Science—Figuring on Food—Publisher's Department. 144

A STRAW.

The *Poultry Yard* says that an assessor in a small Massachusetts town went to the trouble of ascertaining the number of chickens kept in the place. There were 1,036 dwelling houses, 1,120 families, and 844 of them kept fowls. Seven kept over 100 each and two had over 200. The total number of fowls, old and young, in March and April, was 12,260, of which 10,000 were hens, laying eggs.

"If these birds lay a fair average number of eggs during the year—at a moderate calculation, say 120 each (and they will do better than this, for they are largely of the Asiatic, Leghorn, and mixed varieties)—the egg product of this one village will be 1,200,000 eggs, or about 100,000 dozen. Now this, in a single town, half a dozen miles from a large city, is, we think, a sample of what is being done generally in poultry breeding all over this country, proportionately to the population. At least, this is fair to promise for New England, the middle, and the western states."

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of this paper for a year.

POULTRY-HOUSE WITH END WINDOWS.

One of the most essential things to a poultry-house is the window. Plenty of light makes a house comfortable, and, as fowls detest darkness, too much light can not be given.

The illustration designed by Mr. Theo. Jennings, Rye, N. Y., represents a building twelve feet long, eight feet wide, eight feet high in front and six feet high at the rear, the roof covered with tarred felt or any other water-proof material. Two large windows, each forty by seventy inches, give light, they being placed near together at the southwest corner of the roosting apartment. Two doors are shown, one entering the roosting apartment on the left, and the other the feed-room, the feed-room being lighted by a window, or transom, over the door. The two rooms are separated by a lath partition. The roosts are arranged over a platform at the rear of the roosting room, with the nests under the platform. The cost of the house, including labor, should not exceed $35. The ventilators, one at each end, are seen at H H.

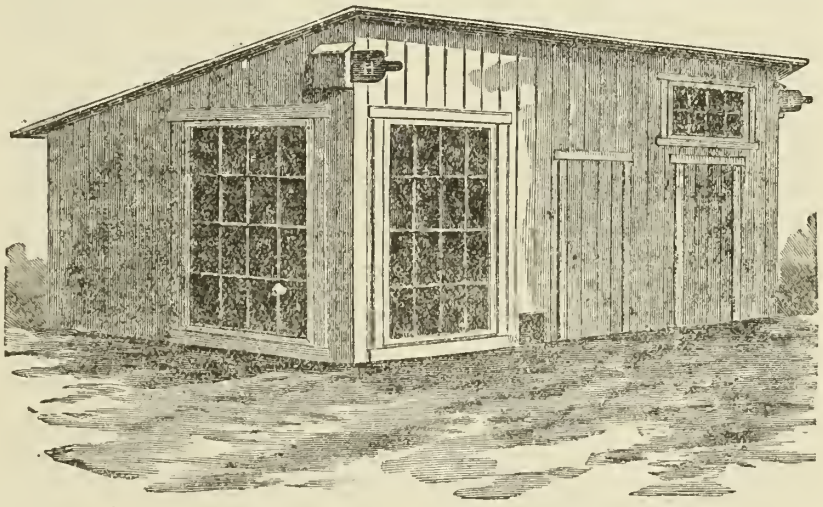


FIG. 1.—POULTRY HOUSE WITH END WINDOWS.—(See Fig. 2 on Page 140.)

They are circular holes, twelve inches in diameter, cut in each end of the house, near the top, but far enough from the front to clear the corner posts, and as the matter of ventilation is important, the plan given may be worthy of notice.

Fig. 2 gives a plan of a ventilator, as mentioned, they opening and closing by the slide N, which runs in grooved pieces nailed above and below the hole. To keep out rain and snow, a box is fitted over the hole, which has only three sides and a sloping top. The air enters at the bottom and passes up and through the hole in the side of the coop, as indicated by the arrows.

Of course, the windows may be arranged differently if preferred, but, if arranged as shown, the fowls will have a light scratching place, while the roosts, being at the rear, will be out of the way of drafts of air from any source. The windows cannot be opened, but the door should remain open during the day. The window over the feed room should be arranged so as to be raised from the outside.

As a cheap, light and convenient poultry-house for a flock of one dozen hens, the plan is an excellent one.

CONFINEMENT AND CORN.

When fowls have a free range, and can select such foods as they prefer, they will not always accept food that is not varied. Instances are known in which Leghorn hens on the range refused corn although Brahmas in an adjoining yard accepted the corn very readily. This shows that the instinct of the hens prompts them at times to reject unsuitable food when they can secure that which is better adapted to their purpose. The active Leghorns on the range found better food than corn for producing eggs while the Brahmas in the yards had no alternative but to receive whatever was placed before them.

It has also been noticed again that corn could be fed to Leghorns in larger quantities than to Brahmas, provided the Leghorns were not confined, and that they also produced abundantly of eggs although allowed corn only. Being on the range, however, the food picked up simply balanced the ration, the corn in that case being a very proper food, but had the Leghorns been confined, and given no food but corn, they would have become overfat, and failed to give good results. Their active habits permit them to consume more carbonaceous food, proportionately, than other fowls. Some breeds have a tendency to readily fatten, but the Leghorn does not belong to that class. Leghorns can, of course, be gotten in a fat condition, but it will require more food to fatten them, in proportion to size, than is necessary for some of the larger breeds.

The best evidence that Leghorns are being overfed is when they begin to sit, for all hens of the non-sitting breeds will sit if they become fat. Even the Brahma will fail to sit if she does not become fat and for that reason judgment should be used in feeding. If Leghorns and Brahmas are kept together they cannot be fed properly, as they differ greatly in their characteristics, but many poultrymen fail to observe this fact, and keep hens of all sizes, breeds, ages and conditions in one lot. If flocks are bred uniformly, and the hens are as nearly alike in all respects as possible, some of the difficulties of management will be removed, and the hens will also give much better results.

WARMTH AND EGGS.

That eggs are high now, and that the very time that the hens should lay they are idle, is true, but the cause of the high prices is due to a scarcity of eggs in all quarters, and the farmer who supposes that he alone is unfortunate is mistaken. If the hens were now laying eggs as abundantly as they sometimes do the prices would go down correspondingly. If the farmer can derive only a few eggs from his hens at this season, and under the existing unfavorable conditions, he will have no cause to complain.

Severe cold demands extra precautions to protect the hens. They are very liable to be frosted on very cold nights, the combs and wattles exposing a large and unprotected surface to the atmosphere. If the wind can be kept out of the poultry house the danger will be materially lessened, and the poultry house should be carefully examined in order to be sure of no draughts entering. The sources of frozen comb and wattles, as well as of swollen heads and eyes, may always be found in the cracks, holes, and other avenues through which a small cold stream of air enters. When a fowl is on the roost it is stationary for the night, and a nail hole may allow a cold draught to come directly on the head, neck and shoulders. This may be a small amount of air, but when the hen is exposed to it for ten hours she is in worse condition the next morning than if she had been shut out of the poultry house entirely.

A difference of ten degrees temperature in a poultry house may be the turning point between laying and non-laying. If the heat derived from the food must be used for sustaining life against the danger of severe cold there will be nothing left from which eggs can be produced. When the house is made warm there is a saving of food, and when the hens are comfortable they will take more exercise and keep in condition for laying. A pound of nails, a few laths, and a roll of heavy paper, costing but little, will greatly aid in making the poultry house warm.

SIZE AND SPACE.

The number of hens that are to be kept in a poultry house depends as much upon the size of the hens as upon the size of the house and the length of the roost. Everyone knows that a large hen requires more room on a roost than does a small one, but the large hen will not lay any more eggs than will a small one. A fair estimate is to allow each hen one foot of space on the roost and ten square feet of space on the floor, but the rule is not infallible, for it is not impossible to keep fifteen small hens where only twelve large ones can be comfortably accommodated. Where the houses are intended for a small flock this should be taken into consideration.

BUCKWHEAT and oats are far ahead of corn and wheat for poultry but are not used as much as they should be.

EXPERIMENTS WITH TURKEYS.

CONFINEMENT AND FREE RANGE—WILD TURKEY CROSSES—IMPROVEMENT WITH WILD BLOOD—SOME VALUABLE FACTS.

Mr. Samuel Cushman, Kingston, R. I., the indefatigible manager of the poultry department of the Rhode Island Experiment Station, confers another benefit on poultry raisers, and especially those interested in turkeys, by issuing bulletin No. 25, which is a valuable paper. We can only select from the bulletin such portions as limited space permits. Mr. Cushman says:

As Bronze turkeys, which are the largest and hardiest of all domestic varieties, are the result of such a cross, it was reasonably expected that by introducing the original wild blood into the turkey stock of the State much greater vigor and thrift would be secured as well as their table qualities improved. A gobbler raised from wild turkey eggs found in the woods was procured from Maryland but was not received until the latter part of March. Although usually very tame and fearless, his wild nature was so thoroughly aroused by the journey that he was unmanageable and could not be kept on the place for a long time without confinement. As the excitement and change of climate affected him so unfavorably that it was thought he would die, he was given his liberty, when he immediately went to the woods. Weeks afterwards he took up quarters in a neighboring farm yard, became so tame as to eat from the hand and gradually improved in condition. After being caught, brought back and confined a few times, he became reconciled to the Experiment Station farm, and has since stayed about the poultry division grounds.

A number of domestic hen turkeys had been bought of one of the most extensive turkey raisers of this State, for crossing, but we were unable to mate them or even get the wild gobbler to associate with them. He avoided them, drove them away from him, and did not strut or gobble that season. A domestic gobbler of different stock was therefore procured of another successful raiser, and a small flock of turkeys was raised.

A shed for experimental use as sitting and roosting quarters for turkeys had been built early in the spring. It was made similar to a carriage shed but with slats over the front. Its dimensions are 20 feet long by 12 wide. The posts are 8 feet high at the front and 10 feet high at the rear. Roosts were provided and placed high enough to be out of the wind and above the eaves. Two large coops for temporary confinement were built against one end, and beneath them secluded compartments for sitting turkeys. One gable was fitted with a ventilating shutter, which was left open in warm weather. The flock was driven to this shed to roost at night, and when about to lay were confined every morning until each had selected a nest and deposited an egg therein. The eggs were very fertile, fifteen out of sixteen having hatched in each instance. The young turkeys seemed frail and tender but did well until several weeks old. Each hen with her young was confined for two or three days to a movable wired-in shed, after which they were allowed their liberty on pleasant days after the dew was off the grass. They were confined during stormy weather and at night. The shed was frequently moved to fresh ground. They were fed four times daily for a few days with bread crumbs moistened with milk, hard boiled eggs, and scalded meal, and then with corn meal dough mixed with milk, crackers soaked in milk, and cracked corn, making three feeds each day. When three months old they were only given cracked corn at night. One or two young turkeys gave out the second or third week, being, apparently, not strong enough to keep up with the wanderings of the rest. A number were lost when about the size of quails by being caught by a heavy shower while foraging in the high grass. In August several died within a few days of each other. After this one occasionally died until they were full grown. Roosts were put up in the small sheds as soon as they were large enough to use them. When about one-third grown one lot was allowed perfect freedom to roost on fences or trees as they chose, and as they did not come up to the poultry yards they secured less feed. At the same time another lot was driven to the large turkey house to roost, and compelled to roost under cover the whole season. Our first season's experience convinced us that, although confining little turkeys at night and when the dew is on prevents their being draggled and lost in the wet grass, it is detrimental to their welfare, and should not be continued too long. If possible, they should have full liberty where the grass is short. Their nature is such that they need cool, free air, and a great deal of exercise.

Of late years Prudence Island has been one of the leading turkey producing sections. Over 800 turkeys were raised there in 1892. Mr. Geo. Tucker raises the largest number, and probably produces more turkeys than any one in this State. In 1888 he raised 225 turkeys from twenty-two hens; in 1889, 306 from twenty-eight hens; in 1890, 340 from thirty hens; in 1891, 322 from thirty-six hens; in 1892, 425 from thirty-five hens, and this season at this date he has over 300 young turkeys on the way to maturity. Previous to 1888 he had only average success, but since that time, owing to an improvement in his management, he has had but very little loss. He credits his present success to having gained a clearer understanding of the requirements of turkeys, as well as to having procured from Connecticut a very fine gobbler, by means of which he increased the hardiness of his flock. He has since been more careful in selecting new blood. He found that young turkeys that were kept near the house or under the trees in the orchard did not thrive, many had swelled heads and soon died. On the other hand those placed on the highest and dryest pastures, where there were no trees and but a light growth of grass, did the best of all. He usually winters from twenty to thirty-five hen turkeys and two gobblers One gobbler is sufficient but the second is kept in case one should die or fail in any way. The gobblers weigh from thirty to thirty-five pounds and usually are kept two seasons, and the hens two or three seasons, old hens being the surest breeders. They roost out in the trees the year through and but few are lost. In the spring a sufficient number of nests are made for the hens by placing barrels by the walls and fences near the house and barns, or by laying wide boards against the walls. In them is placed leaves or cut straw. The turkeys readily take possession of these nests, although some persist in seeking out one of their own. This is usually allowed unless a swampy location, or one too far away, is chosen, when the nest is broken up and the hen induced to choose another.

Sometimes several lay in the same nest. To prevent this, a nest in which a turkey has commenced to lay is, after she has deposited her egg, shut up for the remainder of the day to keep out intruders. When the crows eat eggs laid in the nests that are far from the house, they are frightened away by strings stretched across near the nest. Glass nest eggs are used Eggs are gathered daily to prevent their being chilled and that rats may not get them. They are kept in pans having a few oats in the bottom to prevent their rolling about. Each panful holds two sittings, and it is dated that their age may be known. When a hen stays on the nest for two nights seventeen of the oldest eggs are given her; the eggs laid by her during the two days are not left in the nest. The nests are first shaped so that they will not b so flat as to allow the eggs to roll out, or so deep as to cause them to be piled one upon another. The turkeys seem to do better if not fed while sitting. Those occupying nests near together are looked after daily to see that they return to their own nests. Mr. Tucker at first experienced some trouble in having turkeys come off with a few young, those late in hatching being left to their fate. This was partly overcome by sitting eggs of the same age. By feeding hens with dough when the eggs are due to hatch they are also contented to stay on the nest longer. When the turkeys are a couple of days old and seem quite strong, they are placed in a basket, and with the hen removed to a remote part of the farm. Triangular pens, made of three boards, twelve feet long and one foot high, are placed in the fields, where it is intended the flocks shall stay until nearly grown. They are not located near together lest the different flocks attract each other's attention. But four or five pens are put in a twenty acre field. The little turkeys or poults are put in one of these pens with some dough and the hen is gently placed beside them. In releasing the hen, Mr. Tucker takes pains to step quickly back toward the wind, that, if frightened, she may go in a direction in which the cries of her young may be heard and bring her to them. The pens are removed to fresh ground frequently. Care is taken that the pens are placed on ground free from hollows that may hold water, for some turkeys when hovering their brood in such places will remain in them while they fill with rain and the brood is drowned After five or six days, when the young are strong enough to follow the hen without being worn out, and have become so familiar with the attendant that they will come when called, they are let out of the pens and allowed free range.

In feeding and looking after this number of turkeys, the attendant, usually one of Mr. Tucker's daughters, has to walk about three miles to go the rounds. Until four weeks old their food consists of corn meal mixed with sour milk, and they are given sour milk to drink, no water being given them. When four weeks old, cracked corn is mixed with the meal, and the quantity is gradually increased until at eight or ten weeks old their feed consists of cracked corn moistened with sour milk. Until June 1st they are fed three times each day. From June 1st to July 15th they are fed twice a day. After this Mr. Tucker used to give them no feed until they commenced to come to the house in the latter part of September, when a little whole corn was given them daily, but of late years he has thought they did not get enough without it and has continued the feed the whole season. In November they are given all the corn they will eat. They like northern white flint corn the best, fatten most rapidly on it, and the quality of the flesh is also finer when it is given. If fed new corn they have bowel trouble. Mr. Tucker usually gives old and new corn mixed for fattening. When the young turkeys get to be the size of quails, two hens and their flocks usually join force and roam together until fall. In the fall the sexes separate, the gobblers going together in one flock and the hens in another. About Thanksgiving the litters hatched in the latter half of May weigh, gobblers eighteen to twenty pounds, and hens ten to eleven pounds each. Mr. Tucker does not care to raise second litters. When he has them it is because the hens have stolen their nests. He has considerable loss among late turkeys, and if such birds are kept over winter they get sick more readily, and, as disease spreads very quickly among turkeys, he looks upon them as disease breeders.

The turkeys of the early litters that are lost generally die during the first week, or in August, when two or three months old. There are no foxes, weasels or skunks on the Island.

Mr. Tucker prefers birds with short legs, as they have the plumpest bodies. His turkeys are a mixture. Many are of a light gray color similar to Narragansett turkeys. There are also buff, brown and dark ones. He prefers the brown and gray to the black, as they look better when dressed. He finds medium weights sell best except at Thanksgiving, Christmas or New Year.

Upon exhibiting the wild gobbler at Kingston Fair last fall we learned that the Miner Bros., of North Stonington, had wild turkeys and their crosses, and we were not slow in accepting an invitation to inspect them. Mr. Elias Miner has raised large flocks of turkeys for forty years. He used to kill off and market the largest, and breed from late turkeys and small gobblers (as many do now), but learned after awhile that it did not pay, that it decreased the size and run out the stock. It was a temptation to get the largest amount of money possible from a flock in one season, but the returns were less the following seasons. He has for a long time saved the best for breeders and changed gobblers every season or every other season. He is careful to either test a gobbler as a breeder or know how his progeny have turned out before he depends upon him for his season's breeding. He often has trouble to get a satisfactory bird. He thinks the stock of the State has been spoiled by killing the best and breeding from birds that are inferior or nearly related His stock has been mostly Narragansett and Bronze. For the last fifteen years the sons have used wild turkey blood for crossing They have owned several pure wild gobblers When we visited them about Thanksgiving time we saw a fine flock of about 200, among which were birds having three-quarters, one-quarter and one-half wild blood, as well as one bought for a pure wild gobbler. The Miners find that to get size, one-fourth wild blood is better than more. Half wild crosses are very hardy, but smaller than domestic turkeys, and the hens roam so much and steal their nests so far from home that they are undesirable in breeding for market purposes. They often roam off and stay away all summer but are almost sure to return in the fall. Their flesh is about as fine as that of a wild turkey. Half wild gobblers are more manageable than the hens and are just the thing to cross with common turkeys. The birds raised from such a mating are not only of good size but hardy and thrifty, and make fine dressed turkeys. Turkeys having about one-third or one-quarter wild blood, and the remainder Bronze blood, have, with them, grown the largest. In their experience, the gobbler has had most influence on the size of the progeny. They find that smoke colored, brown, and light gray Narragansetts look best when dressed. Bronze are not so plump for Thanksgiving, but mature in time for Christmas and New Year.

He provides one gobbler for each twelve hens, but thinks twenty hens to one gobbler may not be too many. Some of the gobblers used have, at two years old, weighed as high as forty-four pounds, and the hens as much as twenty-two pounds. Hens weighing eighteen pounds are quite plenty in his flock. He finds that disposition has more to do with hens being good mothers than size. Some of his largest hens are the best of mothers.

In raising young turkeys with domestic turkey hens he confines the hens for a few days to a slat coop and allows the little ones full liberty. It will not do, however, to coop wild cross hens in this way, as they thrash about and kill their young in their attempts to escape. The Miners find that young turkeys do best when neither they nor the hen is confined, provided they are put in a pasture lot that is high and dry, where the grass is short and there are no trees. No more than three litters are cooped in a five acre lot. Each coop is provided with a shallow basin for water which is kept very clean and is filled daily. The young turkeys are fed Northern corn meal mixed with sour milk in the spring, coarse cracked corn in the summer, and whole corn in the fall Northern corn is the dependence for feeding and 1,000 bushels on the ear are raised on the place. New corn is feared, as it causes turkeys to have diarrhœa. The little turkeys are light eaters and are given all they want. Over feeding large turkeys prevents their taking exercise and causes disease. Turkeys require a great amount of exercise and the more they have the better.

Messrs. Browning and Chappel, who live on Boston Neck, near Narragansett Pier, have raised turkeys for a number of years, and each season have produced a larger number. In 1891 a flock of seventy-five was reared with success. In 1892 they raised to maturity 150, and this season they have had very little loss, and now have a flock of about 200 young. This flock, which we have lately inspected, consists principally of early hatched birds which are very large and fine. One early litter which attracted our attention had, when first hatched, nineteen poults, and then numbered fourteen turkeys three-quarters grown. They were as strong and bright looking as any we have ever seen. Another flock of uniform age, and nearly as large, contained seventy-five birds. Messrs. Browning and Chappel have taken considerable pains to get fine gobblers and have changed blood frequently. They have bought a number from the West, one of which contained some wild blood. Nests are made about the house and roadsides and are appropriated by the turkeys. The young turkeys are fed corn bread, crumbled, and slightly moistened with sweet milk. In making this bread, the meal is mixed with sweet milk and given time to swell and then baked. After a few weeks a portion of scalded cracked corn is mixed with the crumbs, and the proportion gradually increased until clear cracked corn is given. The cracked corn is always well scalded and allowed to swell before it is fed. On cold, stormy days a small quantity of black pepper is added to the bread crumbs on cracked corn. They find that turkeys that forage in a field of green oats will have diarrhœa. They take pains to use old corn for fattening as new corn also causes bowel trouble. During September and October they do not feed the turkeys at all, but in November all the whole old corn they will eat is given them and they get fat very rapidly. Mr. Browning claims that his turkeys that are not fed for these two months not only get their own living, but will be larger and heavier when killed at Thanksgiving than others of the same age that have been fed right along. The land where the turkeys are kept is quite dry, almost treeless, and has but a slight growth of grass. It is on the sea and partly surrounded by salt water.

Mr. Elisha D. Browning, in the same neighborhood, raises from seventy to 100 very fine turkeys each season. He feeds corn meal dough, cracked corn and whole corn. He finds that if the turkeys stay about the house and barns they are almost sure to have distemper, and he is very particular to keep them in the fields remote from the house. When fattening them in the fall, they are driven away from the vicinity of the buildings and fed in the fields. He has used Condition Powders in the feed (when fattening only), and finds that they eat more and gain faster. They are then given dough in the morning and whole corn at night. Mr. Browning appreciates the value of a good gobbler and takes pains to secure one.

Mr. Carder Whaley, of Wakefield, has raised turkeys successfully for years. In 1892 he hatched 200 and raised 150 of them. He kills a part of them in July, when, although small, they often bring $3.50 per pair. He estimated that 1,500 partly grown turkeys were marketed in that region that summer. He gives young turkeys dough made of Northern corn meal mixed with new milk, and feeds them from three to five times per day at first. He finds hominy chop (commonly fed to geese and poultry) is too loosening for turkeys. He does not coop the brooding turkey or pen the young, but fastens a shingle to the shoulders of the hen to prevent her flying and sets them at liberty in a large field. After a time cracked corn is mixed with the dough, and the quantity of corn gradually increased until it is fed clear. Late in the season whole corn is given. Turkey hens that are fat are late in laying. If fed lightly with nothing but oats early in the spring, they are induced to exercise more, become thinner, and lay earlier. Mr. Whaley is particular about his gobblers and makes a change when necessary. His stock is a mixture; gray, brown and black birds are to be seen in his flock.

Last fall Mr. Horace Vose, of Westerly, very kindly drove us about among some of the turkey raisers in his vicinity. He thinks that section produces as fine turkeys as ever were produced. During the Civil War he received an order for Thanksgiving turkeys for the army, and was able to ship the government 34,000 pounds. Some of the dressed gobblers that have passed through his hands have weighed thirty-six pounds. In 1890 the heaviest dressed turkeys he handled weighed thirty-one and one-half and thirty-four pounds. A twenty-one pound turkey will shrink about three pounds in dressing. He receives dressed turkeys, assorts them, washes off blood spots and packs them for shipment in boxes lined with paper. An even number of hens and toms are put in each package. Mr. Vose realizes that a lack of proper breeding stock has had much to do with the decline in turkey production. He appreciates the importance of using the very finest gobblers and the value of wild turkey crosses, and has several times brought from the West, along with a carload of horses, a number of gobblers that had some wild blood. These he has disposed of at less than cost to those who sell their turkeys to him, to make sure that they use superior blood for breeding.

Crandall Bros., near Westerly, had, for several reasons, rather poor success in raising turkeys. In 1891, the gobblers used were thought to have been good ones, and plenty of young turkeys were hatched, but they sickened and died all through the season, and but few were raised. Last season they used gobblers furnished by Mr. Vose. On one farm 133 turkeys were hatched from nine hens and 102 were raised to maturity. On both farms about 300 were hatched and 225 raised, and there was not a sick one in the flock. The Crandalls gave the same care and feed each season, and believe their success is due simply to the use of the western gobblers. They say the introduction of this new blood was worth $100 to them. Their stock was a mixture of different breeds, mostly Narragansett and Bronze, and we believe had been somewhat in-bred.

A flock of 130, nearly pure Narragansetts, were seen on another farm. They are light gray, more gentle than the Bronze or cross breeds, do not roam so far, are smaller, mature earlier, and are blocky in shape.

One man, whose stock was inspected on this trip, had a large space enclosed by a high fence of wire netting, which was used to prevent the turkeys laying and sitting in the woods and fields. Nests are provided within the enclosure. During the laying season the hen turkeys are driven within the enclosure to roost, and confined to it during the forenoon each day until all have selected nests. When hatching, they and their young are more readily cared for and controlled.

During these investigations we have been impressed by the fact that all, or nearly all, of these successful turkey raisers have farms on, or very near, the sea.

With the exception of the Block Island producers most of the parties visited received for their Thanksgiving turkeys twenty-two and twenty-three cents per pound alive, and from twenty-five to to twenty-seven cents dressed. At the same time that Western turkeys were being sold in Providence for eighteen cents per pound, Rhode Island turkeys were bringing at the best markets from thirty to thirty-five cents per pound.

FREQUENT CAUSES OF POOR SUCCESS.

We have been surprised to find how great a proportion of those who attempt to raise turkeys use small and immature birds for breeders. Many kill their earliest and best birds for the market and keep for breeding those that are too small or too late to be salable. They kill the goose that lays the golden eggs. In buying a new gobbler or a few hens to change the blood they choose late hatched, immature turkeys because they cost less. The reason sometimes given for this is that old hens are to cunning about stealing their nests and that young turkeys lay earlier. This practice is not confined to the poorest and least intelligent people, as would be expected, but is followed by those well informed, and who appreciate and pay for a well bred horse or cow. If such a course was followed with horses and cattle the best stock in existence would be ruined in a few generations. Many who know that turkeys two years old or older give the strongest and largest young continue to kill off the young hens for market after breeding from them one season. There seems to be a dread of having something too old or unsalable left on their hands. To breed from immature or poor specimens is to violate one of the first laws of breeding. Selection of the best for generations has given us the improved and most profitable breeds of stock. The hereditary influence of such selection is of great value. The most inferior bird out of a flock of such blood may "throw back" and breed very fine stock and do better than a much finer specimen from a poorly bred strain, but the repeated selection of inferior birds for a number of generations makes this inferiority hereditary.

The future stock depends almost entirely on the parent birds or their ancestry.

If valuable birds are used for breeding their offspring will be like them and amply repay the extra expense. The best are none too good and are the cheapest.

A turkey raiser who keeps the finest stock we know of and does not advertise in the poultry journals, says there is no use trying to make the sale of breeding turkeys a part of his business. He sends to various parts of the country for stock and pays large prices for birds that suit him. Often several gobblers are bought before one is secured that is satisfactory. The express charges are usually pretty heavy and a gobbler often costs, delivered, from $15 to $25. This expense is incurred to get and keep fine stock, but he finds so few buyers in this region that are willing to give more for a breeder than the bird is worth dressed that he kills and markets what he raises. This should not be in a section where there is so much run-out stock, and where so many keep turkeys. Instead of hesitating to pay the killing price for the best hen or gobbler in a flock, the turkey raiser should think himself fortunate to secure the best at three or four times the mere market value of the bird. Such an expenditure pays in the end and in the case of an extra fine gobbler will usually be more than recovered through the increased average weight of the flock raised the first season. If such a practice is followed for years, stock will be obtained upon which dependence may be placed.

Crandall Brothers, previously mentioned as having used Western gobblers furnished by Mr. Vose, raised so many more turkeys in consequence that they estimate the benefit derived the first season at $100. It would have been economy for them to have paid $50 for the two gobblers rather than use the kind of stock they had previously bred from. This expenditure would have paid the first season, to say nothing about the improvement in their breeding stock for the future. Many breeding turkeys are over-fat in the spring—have been overfed or given too fattening food. Quite frequently they die at this time as the result of over-feeding. The progeny of overfat birds are less vigorous. Late hatched hens that are growing all the time need more food, cannot store up a surplus and lay earlier because they are thin. Feed the old hens clover and less carbonaceous food in the latter part of winter and they will give better satisfaction. Corn is all right when turkeys can find their own green food and insect ration to go with it, but when they get little exercise and can get nothing else to eat they become abnormally fat.

If a turkey becomes sick and is allowed to roam with the others, and eat, drink and roost in the same places, the others will probably have the trouble very soon. If a flock becomes diseased, the land which they wander over may become contaminated and infect other flocks that occupy the same ground. Therefore stamp out disease when it first appears. Let every turkey raiser be a board of health; quarantine or kill and bury deep all sick fowls and disinfect what they have contaminated. Prevention of the spread of disease is possible. Doctoring very sick turkeys is rarely practicable. If turkeys are kept where they may drink from stagnant pools in the barnyard, near the pig pen, privy vault, or from the sink drain, sudden and fatal attacks of bowel trouble should be expected among them. A running stream is of great value on a turkey farm. If brine is poured out and they drink it or they pick up pieces of salt, salt meat or salt fish, death usually follows.

Neglect to exterminate lice causes more loss among little turkeys than any other cause and their presence is quite frequently unsuspected. Kill them on the hen turkey before she is set and dust her and the little ones with insect powder three times per week while they are cooped. As the dust finds little lodgment on their heads, where lice often are, grease the tops of their heads with lard. We have used carbonized vaseline for this purpose. They are infested with long lice and mites. Look for the long lice about the base of the wing and tail feathers. "Just one or two" are enough to affect a tender, little turkey and may breed many. Aim to exterminate lice by frequent treatment. Do not set eggs under vermin-infested hens or put little turkeys in lice. infested or "distempered" coops. If turkeys are set in barrels laid on their side there should be holes bored in the under side of the barrel to let out rain water, or they may hold water enough to spoil the eggs.

If young turkeys are reared on ground that has long been occupied by a large number of fowls or chickens they may be expected to have the diseases that the chickens had. Turkeys do best if kept and fed separate from fowls or chickens.

Little turkeys are weak and tender creatures, and as they grow very fast require an abundance of nutritious and easily digested food, but it must not be too concentrated. To rich food, too much food that is hard to digest or a lack of green food will cause bowel trouble. They require food oftener than little chicks. Feed little and often. Give cooked food until they develop enough to show the red about the head. Provide green food, liked chopped onions and lettuce, if they are confined in a pen. Little chickens thrive under confinement that would cause disease and death among little turkeys. If the little turkeys are cooped remove them to fresh dry ground frequently. Dampness, lice and filth make short work of them. Give them their food on clean surfaces. They should have water to drink that is fresh and pure and the dishes should be cleaned every time they are filled. They should have continual access to fine gravel, crushed shells and broken charcoal.

Young turkeys should not be out in heavy showers until their backs are well covered with feathers. If they get wet they may die from chill unless put in a warm room to dry. Black and red pepper and ginger in the food or drinking water aid them to overcome a chill and are of great value on cold or damp days and are a preventive of bowel troubles in both young and old turkeys.

WILD TURKEY CROSSES.

Where wild turkeys are plenty, crosses between wild and domestic birds frequently occur without design on the part of the owner of the latter. Scores of cases are recorded where a wild gobbler from the woods has taken possession of a flock of common turkeys, sometimes after first battling with and killing the domestic gobbler. The results of such a cross in almost every case have been so satisfactory that such matings are much desired by turkey raisers in those sections, and young wild birds are caught for this purpose and brought up with common young turkeys. Very often nests of wild turkey eggs are found in the woods and hatched on the farm. These domesticated wild birds usually persist in roosting separate from the others, generally in the woods or on the top of a house or barn. When raised from the egg they become more gentle and fearless than the domestic turkey, but if chased or frightened they recover their wild habits very quickly. Wild turkey crosses are hardier and healthier than common turkeys and rarely have disease. Half blood hens are generally too wild, but half blood gobblers are not as wild, and are suitable for crossing with domestic hens. A small proportion of wild blood improves the size, form, and general appearance, as well as the vigor, without being a disadvantage in any way. A quarter wild cross is better for practical breeding than a pure wild or half wild bird. Half wild crosses do well if allowed a large range but are not well suited for woody countries or as easily kept on small places as the domestic turkey.

Wild turkey hens under domestication and wild first cross hens often disappear in the spring and are not seen until fall, when they usually return to their own home with a brood of full grown turkeys. Half blood mothers make their young too wild. Half bloods reared by domestic turkey hens are not much inclined to stray. Quarter bloods under certain conditions may be as wild as the wild birds of the woods.

The flock of half wild birds reared at the Station this season were very tame and unsuspicious until several were snared for exhibition at the Kingston Fair. Since then they have been so shy that we were unable to secure another lot. They take flight immediately if a suspicious movement is made. They will be more easily caught later in the season. The wild blood gives the cross an astonishing ability to care for themselves. It is apt to have the strongest influence in breeding. If first crosses are bred together the stock resembles the pure wild, and after several generations can not be distinguished from the pure wild by good judges. The older the bird grows the more he shows the wild blood. Crosses have much of the superior game flavor of the wild and command a higher price for the table.

Some wild bronze crosses that are half and three-quarters wild blood are as large as the pure Bronze turkeys. Several years crossing, however, with the selection of the largest for breeding each season gives the greatest size.

In the lower engraving the half wild and the domestic gobblers may be compared. Those on the left are from Chappel's Rhode Island stock. On the right is a two-year old having three-fourths wild and one-fourth Bronze blood, and a young gobbler reared from him. These were bought of Wm. Enty, of Pennsylvania. The engraving in the upper left corner shows a half blood yearling, from Laughlin, of Iowa, and a half blood yearling from Maryland. These birds have been used as breeders but not on the Station farm. The Entys have handled, dead and alive, a large number of wild gobblers; the father, who is ninety-one years old, has since 1811 shot wild turkeys in the West, South, and in Ontario, but they have never seen birds over twenty-five pounds in weight. Mr. Enty says a wild hen mated with a tall Bronze gobbler will give very large birds, but they will be very wild. Their stock is from the spurs of the Allegheny mountains in Pennsylvania. June hatched birds, half bloods, with him weigh eighteen to twenty-two pounds in December. With Mr. Laughlin wild and half wild birds weigh, young males, fifteen to twenty pounds. Wild and wild cross birds—especially the hens, owing to their slim heads and necks and their having less red about the head, are, when seen among common turkeys, often taken for sick birds by those not familiar with them.

It is to be hoped that the time when wild turkeys are to become extinct is far distant. The methods followed by the average turkey raiser so depreciate the stock that without the occasional introduction of fresh, hardy blood from the forest it would become very much degenerated. When there are no wild turkeys except those preserved by man, the salvation of the domestic turkey will depend upon fanciers—those who breed for beauty and utility. They maintain the varieties pure and perfect them. They, only, expend the required time and money, and follow the laws of breeding necessary to prevent the stock from running out. When will farmers, generally, appreciate the value of such service and cease to scoff at fancy prices?

DISTRIBUTION OF WILD CROSS BREEDING STOCK.

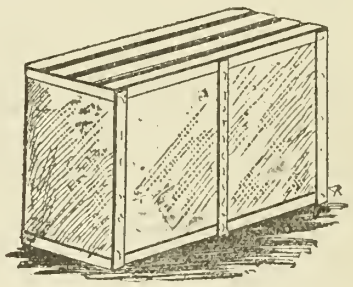
Arrangements were made last winter to have raised a large number of wild cross turkeys, and the Poultry Division is now prepared to furnish breeders to farmers living within the State from a flock of 300 raised on one farm from the Enty three-quarter wild old gobbler. Also from a flock of 100 raised in another section from the Laughlin half-blood yearling. Fine R. I. hens were mated with them in each case. With these and the half-bloods raised on the Station farm we have three unrelated lots containing wild blood to draw from, but the latter are not offered. Orders must be sent in before November 1st, as all of the birds not previously engaged will be killed for Thanksgiving. To cover the expense of procuring breeders, shipping coops, and traveling expenses one dollar will be added to the live weight market price (of last fall) of each turkey. With all orders an enclosure of $5.50 will be required for each gobbler, and $4.00 for each hen. Orders will be booked as received and filled in the same order, the best being selected each time. The birds will all be shipped at one time, in the latter part of November or early in December. They will be weighed before they are crated. After deducting twenty-three cents per pound and $1.00 besides for each bird, the balance of the sum forwarded will be returned. Each person will be notified by mail a few days before the birds are to be shipped, as well as at the time they are delivered. The Station assumes no responsibility after they are delivered to the express company. The buyer takes the risk. No birds will be taken back. Every turkey will be inspected, and on no account will one be sent that is not right in every way. Each party will also be informed which kind of stock is sent to him, so that when it is desired farmers having different kinds may exchange and thus get new blood. We do not advise breeding from both gobblers and hens of this cross, as there will be too much wild blood in the progeny, but both hens and gobblers will be furnished if it is desired. It will be the best economy to buy a gobbler, and we advise that he be kept as long as he lives, that he be bred with common hens, and that they be kept as long as they are good for anything.

To those out of the State who have made inquiries for stock, gobblers will be furnished at $10.00 each and hens at $5.00 each, after Rhode Island orders are filled. Parties near the State given the preference.

There were many visits to different farms reported by Mr. Cushman, and his object is to show that *hardiness* is an important factor in raising turkeys. He also informs the readers how they can procure half wild, or wild stock, and gives details of management of young broods. We regard his experiments and bulletin as invaluable.

MR. BENNETT'S SHIPPING COOP.

Mr. John Bennett, the veteran breeder of Black Spanish, at Sumner, Ind., sends us a design of his shipping coop. It is made of straight-grained plastering lath, and the canvas is tacked on inside to the edge of the lath on bottom and top. A thin bottom is nailed on, and slats on top of the coop, with a quart can for water, fastened the proper height, to one post. A coop for a pair or trio needs no braces, but for a pen of fowls braces should be tacked from the lower to the upper corner. Mr. Bennett says of this coop, "I never lost a fowl by the coop breaking in my thirty years' experience." The weight of the coop, for a pair or trio, is only from three to five pounds, and for a pen from eight to nine pounds. Always make the coop high enough so that the combs do not touch the top. Mr. Bennett gives this coop for the benefit of our readers, and says that any breeder who will hunt up old boxes to ship birds in ought to be boycotted.



BENNETT'S SHIPPING COOP.

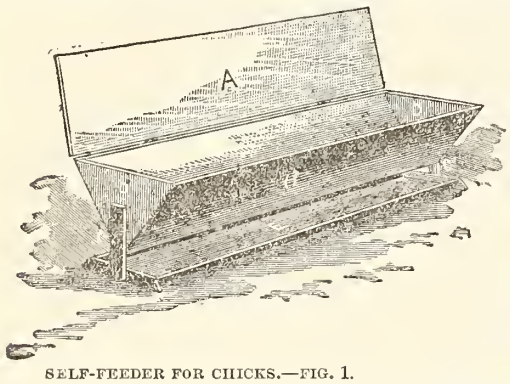
The canvas on the shipping coop laps about three inches on one side, where the fowls can be put in or taken out at will. There is, therefore, no need of tearing the slats off to do so. When ready to ship put a few stitches in the top, or even a pin or two will answer. This is a great convenience to any fancier handling fowls at fairs, or at home when getting ready to ship. It is so easy to reach in and get hold of the shanks of the birds and pull them out, and still easier to put them in.

PACKING BROILERS.

To pack broilers in barrels for market first have the carcasses cold, as the animal heat should be removed. This is done by placing them in ice-water after they are picked, allowing them to remain in it ten or twelve hours. They are then removed and hung up by the feet in a cool place to drain. Wipe them dry with a clean towel, and put a layer of broilers in the barrel, then a layer of ice, broken to pieces the size of a turkey's egg, covering the broilers well with the ice, followed by alternate layers of broilers and ice until the barrel is full, which should be covered with clean muslin and a thickness of bagging. Do not begin to pack until you are nearly ready to ship, and have all arrangements made in advance with your merchant. Ship by express and avoid all delays. Never ship so as to reach the market on Saturday, as a portion of the stock may have to remain over Sunday before being sold.

SELF-FEEDER FOR YOUNG CHICKS.

A self-feeder, for feeding cracked corn and wheat to young chicks, is given in this issue, being the design of Mr. A. P. Luce, New York. It can be made of half-inch boards. Fig. 1 shows the feeder ready for use. H is the hopper, two feet long, five inches deep, four inches wide at the top and one-fourth of an inch wide at the bottom. It holds from two to three quarts of feed. It may be wider at the bottom, however, and an opening of one-quarter of an inch made in the bottom, so as to allow the feed to fall through. D D are the ends of the hopper, and C C are two pieces, each five inches long and two and three quarter inches wide, nailed fast to the end pieces, D D. They hold the hopper up half an inch from the bottom of the trough, to allow the feed to run down, as shown in Fig. 1. E is the trough where the chicks eat. It is twenty-five inches long, and two and one-half inches wide, inside measure and one-quarter inches deep, outside measure. The sides of the trough are beveled on the inside and outside of the hopper at the bottom, to allow the chicks to feed. A is the cover to the hopper. By this arrangement the food can be kept where the chicks can help themselves at any time.



SELF-FEEDER FOR CHICKS.—FIG. 1.

TESTING EGGS.

Testing the eggs is of importance, as we are able to set two or three hens at a time, when neither eggs for sitting nor sitting hens are over plentiful. Still, forewarned is forearmed, and as many of our readers have doubtless got their incubators to work our hints may be useful to them too. Many people are under the impression that it is possible to tell a fertile from an unfertile egg even before it has been set at all. We constantly meet where purchasers of eggs for hatching write angry letters to the vendors, implying that they have been defrauded, because some or all the eggs sent them were unfertile. It is only by experiment in setting some of them himself that it is possible for a vendor to know whether the eggs from a particular hen or pen of birds is likely to produce a good percentage of chickens. There is, of course, a presumption that from a pen of birds properly mated up there will be a fair percentage of chickens, but it is a presumption which may prove to be erroneous.

The Aylesbury duckers, we believe, sell eggs for hatching guaranteed to be fertile. They have by long experience in egg testing, become so skilled as to be able to discern the embryo duckling when only twenty-four hours or so of the period of incubation has elapsed. They set the eggs for the necessary period, test them, and can then pick out the fertile ones and guarantee their fertility. At this early stage the hatching process can be suspended without fear of harm, and the eggs can even be sent a journey without any additional risk to that incurred by eggs which have not been incubated at all. The object of testing eggs is to ascertain as soon as possible whether or not they are fertile, so that the unfertile ones may be removed and their places filled by a fresh supply. If two or three hens have been set at the same time, and many of the eggs are found to be unfertile, all the fertile ones can be put under one or two hens, as the case may be, and the other hen started afresh with another lot of eggs. Much valuable time can be saved in this way.

In incubator work there is even less difficulty; but care is necessary here that the fresh batch of eggs be warmed before being put in the egg drawer, or that they be carefully separated by wood or flannel or some other non-conducting material, from those eggs which are fairly advanced in the process of incubation. We have known a good many eggs to be lost in artificial incubation by the introduction of cold eggs into the drawer. If the incubator be fitted with a drying box, this is a good place in which to warm the eggs before putting them into the drawer. In any case, care must be taken that they are not exposed to too high a temperature.

VARIOUS METHODS OF TESTING.

The most usual period at which to test the eggs is about the eighth day of incubation. At that time the merest tyro can, without much difficulty, distinguish an unfertile or clear egg from one in which there is or has been a living embryo. There are a good many egg testers in the market, and they all answer their purpose with more or less facility. Any device which enables the operator to get the egg between his eyes and a fairly strong light, while at the same time shading the eye from the light, except so far as the light penetrates the egg, is all that is necessary. A piece of cardboard with a suitable oval aperture is the simplest form of egg tester; while a skilled operator frequently prefers to simply grasp the egg lengthwise in the oval space between the thumb and forefinger, surrounding it as far as possible with the thumb and forefinger. The palm of the hand is kept toward the light and a little practice will enable the operator to effectually shade the light with the other fingers held close to each other in a curved form, one above the other. We have found a small kerosene lamp, with merely a clear glass chimney, a very good light for egg testing, but any fairly bright and concentrated light will do.

We have tested hundreds of eggs by the light of a common candle, but we advise the use of a somewhat brighter flame. A tester of simple construction consists of a piece of cardboard bent round into the shape of a funnel or hollow cone. The smaller aperture is about the size of an egg, the larger is big enough to cover the two eyes of the person using it, and is so shaped as to fit to the face fairly close and to be readily held in position by a piece of elastic stretched round the back of the head. It seems to us that it would be an improvement to make this tester in such a shape as merely to cover one eye of the person using it, and thus leave the other free to be opened at will, so that the operator might see what he was about without difficulty. We fancy the operator who had the field of vision of both eyes limited, by the American contrivance, might find his hair on fire before he quite knew that he was in such close proximity to the light used for the testing.

A CLEAR EGG.

The test used will, or should, disclose that the egg is clear, or, in other words, unfertile, fertile or addled. The appearance presented by a clear egg is simply that of a semi-opaque fluid of uniform, or almost uniform, consistency. If a very bright light is used there will be a slightly darker patch indicating the position of the yolk. The best way to learn what a clear egg looks like is to experiment with a few newly laid eggs. A white egg is much more transparent in its shell than a yellow one, and again, some slightly or deeply colored eggs will be found to have light spots all over their shells when examined. These various appearances of newly laid eggs can readily be learned by a few experiments and the sure knowledge of them saves much trouble in testing eggs during incubation. Eggs which upon being tested are found to be clear, are those which either contain no true ovum or germ—having been laid by a barren hen—or those which, although containing an ovum or germ, yet have not had that germ fertilized. A clear egg remains unaltered throughout the process of incubation except in so far as it may become musty or stale through the influence of the high temperature to which it is subjected. A clear egg, after merely a week's incubation, is quite up to the average eating quality of what are known as market eggs—not fit perhaps for breakfast, but fit enough for cooking purposes. We prefer to keep them for the chicken' food during the first day or two, but there is really no reason why they should not be used for human food.

A FERTILE EGG.

A fertile egg, when tested about the eighth day, presents a very different appearance to an unfertile one. About three parts of it are quite opaque, and do not allow any rays of light to pass through. The degree of development differs a good deal, some eggs being quite opaque at the eighth day, while others are not more than half so. It may be that the embryo has developed four or five days, and then died. In this case the egg presents a merely clouded appearance throughout, quite unlike that of an egg containing a living embryo. It is not well for young beginners to try to do too much, and they should at first confine their efforts to removing the clear eggs, merely marking those as to which they are doubtful for a second examination. If by the fourteenth day they still present the same cloudy appearance, they may be removed.

AN ADDLED EGG.

An egg is frequently said to be addled when it would more properly be described as rotten. A genuine rotten egg is one in which the process of development of the embryo itself has proceeded for a few days and it has then died. The heat of the hatching process causes decomposition to speedily set in; foul gases are generated, and in the end, such eggs sometimes burst, with results disastrous to the nest if they happen to be in it, or still more disastrous to the poultry keeper if he happens to have one of them in his hand at the time of the explosion. An addled egg, on the contrary, is one in which, to the best of our belief, their is no true development of the germ or embryo at all, but merely a false development of the membrane surrounding the germ. Blood vessels are formed, but as there is no proper circulation set up, these vessels soon become ruptured, and a line of blood, usually in an oval form, becomes attached to the lining membrane of the shell. Such eggs can readily be detected at the time of testing and should be rejected.

EARLY TESTING.

We have referred to the Aylesbury duckers testing the eggs at a very early period. With a little experience the fertile can readily be distinguished from the unfertile after forty-eight hours' incubation. By that time the germ will have so far developed that, together with its surrounding membrane, it is about the size of a threepenny-piece. This circular spot is a little darker than the rest of the egg and floats close to the shell at the upper side of the egg when it is held horizontally. Now this spot is not easily seen when the egg is at rest; but, if the egg be held between the forefinger and thumb of the right hand, in the manner we have described above, in a fairly horizontal position, in front of a strong light, and then pressed with the points of the thumb and forefinger of the left hand, and sharply (but not violently) twisted round a little, the top being twisted toward the eye of the operator, the circular spot, or embryo, will readily be seen as it floats back to the top of the egg. Try this first with a white-shelled egg, as in the case of brown eggs there is more difficulty in seeing the embryo. With a strong light, and a knowledge of what to look for, even dark brown eggs may be successfully tested in this way.

SWIMMING THE EGG.

About the eighteenth day of incubation another method of testing may be adopted. A vessel of water of a temperature of 104 degrees or thereabouts and large enough to hold a sitting of eggs floating on its surface should be got ready. A soft dry towel should also be at hand. The eggs are then taken from under the hen and put bodily in the water. It is best to do this, not when the hen is off to feed, but in the evening, leaving the hen sitting on the nest. It is best also to use a vessel with straight sides, as the eggs are liable to be moved by touching the sides of a sloping vessel. It is needful, too, that the vessel be placed either on the ground or on a solid or steady foundation of some kind.

The accuracy of the test depends on the stillness of the water. As soon as the commotion caused by placing the eggs in the water has calmed down it will (if there are live chicks in any of the eggs) be noticed that some of the eggs bob about in a curious way. This is caused by the movement of the living chicks in the shell shifting the centre of gravity of the egg and consequently its floating position in the water. If the movement is strong the chicken is strong too. If there is any movement at all the chicken is living. It does not follow because an egg sinks that there is a dead chicken in it. Those which float very high out of the water are more likely to be dead than those that sink.

As soon as an egg moves it should be carefully lifted out so as to disturb the water as little as possible, lightly dried and placed under the hen. In very dry weather it is better not to dry the eggs, but to put them damp under the hen, but eggs should never be put damp into an incubator. Those eggs which do not move in five minutes can be tested further by examining them with a light. If found to be partly clear they may be rejected. If they seem full and quite dark it is best to give them a chance under the hen, as there may be some little life in them.—*Feathered World (England.)*

DUCK CULTURE SOUTH.

I notice in your September issue an editorial advancing the suspicion that duck culture might pay in the South—and so it will. I must again recall my experience at Claremont, Virginia. After I had carefully looked up the poultry business, and had made a fairly good start, I determined to see what I could do with ducks. Accordingly I purchased a trio of breeders from Mr. James Rankin, of South Easton, Mass., at a cost of fifteen dollars, and the expressage of four dollars added made it a total of nineteen dollars. When the ducks arrived they created quite an excitement, not one of the natives would call them anything else but geese. Well, they were large, and no wonder they were called geese, for placed alongside the native ducks they were regular giants. I found the Southern climate an excellent thing for profit in this line, the mild winters inducing early laying, and it was not much of a trick to have the ducks begin operations in the month of December, while up North, if there has been a hard winter, the ducks hardly ever commence to lay before about March, although the latter part of February is the usual time. I found, also, that the cities of Richmond and Norfolk appreciated duck meat as well as any of our Northern cities, and while the prices are somewhat below those of the North, the market gave a very reasonable figure. Now, as a correspondent in the *Southern Fancier* said in last issue, "the market must be cultivated." Mr. Rankin made his market, and so can every State in the South.

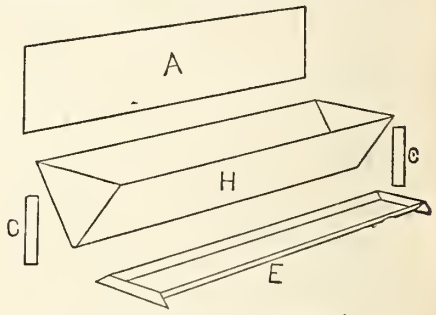
Shipping to the North is a good scheme; but it would be far better to have a local duck club, an organization of all the duck raisers of the county, and have regular shipping days. One man could be taught the method of stabbing and dressing, and for his services he could be paid a certain sum a duck. Every week, for instance, each of the duckers could bring their birds to the place of killing, and a separate account taken of the number of pounds, etc., so that when the check came for the shipment, the club could at once know how much each individual was entitled to.

When in 1858 the late Mr. W. W. Hallock began duck farming on Long Island, it was very much doubted by the residenters if the project would pay. But he kept at it, and although New York at that time was not very much of a duck market, by hard work and perseverance Mr. Hallock soon gained a foothold, and that very farm to-day, operated by his son, is the largest duck farm in this country. I just have it from Mr. A. F. Cooper, of the Prairie State Incubator Company, who recently paid a visit there, that Mr. Hallock this year will clear about six thousand dollars. Mr. Rankin has long ago said that duck farming is the most profitable crop a farmer can grow, and there is room for thousands more to engage in the business.

But I do not see the value in every one shipping to the same market. I believe it would pay best to cultivate a home market. Get our circulars showing what feed the ducks receive, how they are raised, etc., and extol on the delicacy of the flesh, and all that, and have the town flooded with them Advertise—that is the idea. Get up your ducklings in an attractive shape, and make them look tempting, and you will soon create a demand that will be astonishing. Atlanta should be a good market, and so should every Southern city, for my experience with the Southern people is that they are good livers. As one gentleman living in Georgia once said: "We think a great deal about our stomachs."

Hammonton, N. J., is, and has always been considered a broiler town, but gradually she is becoming a duck raising district. On the banks of the beautiful lake, situated near our farm, can be seen duck houses filled with the choicest Pekins, and it is an interesting sight to watch these birds come down the banks to the water; and all over the town you will find small flocks. The impression with a great many people that the ducks must have bathing water should be dropped. They fatten much better without, and the eggs of the breeding stock are just as fertile from ducks kept on land as those in the water. Mr. Rankin does not have any bathing water for his large flocks of ducks, and neither do many of the farmers on Long Island.

In the editorial in the September issue of the *Southern Fancier*, which prompted this article, the writer says he is about starting with several hundred breeding ducks this fall. I would not. Fifty breeding ducks should give one thousand ducklings in a season. Mr. Grant, of Hammonton, has quite a duck farm, and yet he only winters fifty breeders. We have one hundred on our farm. Up in Long Island there are scores of farms that have from fifty up to one, two and three hundred. A few have more—Mr Hallock started this year with one thousand. But let a man begin with fifty, and give these the care and attention they need, and he will be well paid for his work. Then if he is so fixed that he can give the business more room and attention, let him next year go up to one hundred ducks, and so work until he has built up a large concern. But I believe where a man begins at the top of the ladder in the duck business, he is apt to have a much greater fall than he would with poultry generally. There is much to learn—go slow.—*M. K. Boyer, in Southern Fancier.*



SELF-FEEDER FOR CHICKS.—FIG. 1.

TARRED PAPER OR SHINGLES.

The roof is the most expensive part of the poultry house. If tarred paper, the two-ply— be well laid on and covered with coal tar it will last for years and be better each year if a coating of the tar be applied annually, but unless the tarred paper be well battened down at first the winds will rip it all to pieces. A good roost is the main thing for preserving the health of poultry, and if tarred paper be used the wind as well as dampness may be prevented. If the paper is not well put on, the cost will be greater than shingles. The failures of tarred paper roofs may nearly always be traced to oversight in not properly fastening the lower edges of the layers so as to prevent the wind from getting under.

NEVER ventilate from the top. It is cruel and murderous. Fresh air with the thermometer at zero is not very comfortable.

THE EGYPTIAN PLAN—OTHER HINTS.

E. W. SINCLAIR.

As it benefits all to compare notes and ideas, I thought I would give you a little of my experience before I made the acquaintance of the POULTRY KEEPER. Until three years ago I had not seen, and had no experience with brooders or incubators, but a party wanted me to make her a brooder. I had not seen one, but she hunted up a copy of the *American Agriculturist*, in which there was a cut of one, but I did not like it, so I planned one myself, which was much simpler. It is a box, or body, without a bottom, and a double slanting roof, with a tray of one-half inch stuff to slide in and out, for a bottom, and is about one inch above the ground. It is covered with one-quarter to one-half inch of sand, and beneath is a small pit extending to the outside, so that a small hand lamp can be put into it; over the lamp is an old iron pan, bottom up, and with a lot of holes punched into it, to let the heat pass more readily and still protect the bottom of the tray, which is one and one-half inches above it. And, above the tray, or bottom, four and one-half inches, is what I call a "rag mother," that is a loose shelf (as you may call it), with rags on the under side, hanging down to one inch and a half of the tray. The chicks get their heads up amongst the rags, like the feathers of a hen, and so it is a "bottom heat brooder." We have seen no signs of leg weakness. The first season we put in 405 chicks, in four different batches, and did not lose over twenty until they were old enough to begin to sell. Once we had 122 chicks and nine turkeys in it, but we thought they were too much crowded. The size was twenty-eight by thirty-two inches. The chicks were hatched with hens, ten or twelve being set at a time, in an old house by themselves, and covered up, and only let off a half hour before sun-down, to feed, drink and dust. The chicks were kept in the brooder and yard (about sixteen by twenty-five feet), three weeks, or until another hatch came off, and then put in a larger brooder without a lamp, and in a yard sixteen by thirty. I thought I would get up a cheap incubator, as the freight on one would cost so much, and try one on the baker's oven plan. I recollect, when a boy, of reading that chicks were hatched in Egypt by the thousands, in ovens, so I took a small smoke house, four feet, four inches, by four by four inside, and walls nine inches thick. I thought if once heated it would stay hot a week, so I built another wall around the first, leaving a space of four inches between the walls with two small furnaces, one at each side of the double door, so as to make the fire pass around to the back and then up. Inside I had a water tank, two feet by four, with a single four-inch wick lamp under it, though I did not use the lamp much, but heated the water, two buckets full a day, in an iron wash kettle. I could put in eight trays of 156 eggs each, but I found I could not regulate the heat, so I only put in six and one-half dozen in one tray, and put in one tray a week, intending to have a tray come off each week, but as eggs were worth fifty cents a dozen, we thought we would not risk so much. I only made four hatches; the first I only got eleven chicks, the second time, twenty-three, the third, forty-four, and the last, thirty-four. I did not know anything about testing out the eggs that were not fertile, but I noticed, in breaking those that did not hatch, that from the third hatch, from which I got forty-four chicks, there were fifteen that the yolks were yellow, when broken. Out of seventy-eight eggs I got forty-four chicks, almost seventy per cent., and I had only a dairy thermometer hung over the eggs. Had I put in four tiers, as intended, the upper ones would have been too hot, while the bottom tier would have been too cold. The egg turner worked to a charm. The trays I made with slat bottoms, slats one-fourth inch thick, one and three eighths wide and one and one-fourth apart, covered with thin muslin, stretched tight the length way of the slats and loose crossways, so that the eggs sagged it down and rested on the slats, the corners of which were taken off, and as the eggs were placed cross-wise, they rolled nicely when one end was raised and there was just room for them to roll half over, and the next time roll back. There is one thing more I wish to mention. I noticed in the POULTRY KEEPER a lady mentioned using salt as a preventative for feather pulling. Last year, and the year before, we were troubled a great deal with the chicks from a week to six or eight weeks old picking one another, and killing them if they were not taken out of the yard. Ground meat or bone we could not get, but gave a good deal of meat in the shape of black-birds and doves shot for them, house scraps, milk and curd. This season they have had almost no meat, but fed on wheat, ground in a coffee mill, three or four pints of wheat ground, and a large tablespoonfull of salt, or a little more, boiled with the wheat and fed cold, and there has been no picking, to speak of, not as much in the season as there was in a week last year and the year before, while the wheat feed was the same except the salt. I hope this may benefit some one else. Try it. Should any one need any more information about the cheap brooder, let them write me and I will answer them.

[Mr. Sinclair omitted his postoffice. His letter is very interesting. The Dec., 1890, issue of the POULTRY KEEPER contains the Egyptian method, illustrated.—ED.]

ROOSTS AND LAMENESS.

J. R. DIXON, CHICAGO, ILL.

I have been a constant reader of the POULTRY KEEPER for the last five years. This fall I tore down my two hen-houses and remodelled them after a plan described on page twenty-six, May number. I have more room and convenience than my other two poultry houses afforded. A great many of my visitors have expressed their opinion, and say it beats any of their ideas. One person found fault with the roosts, however. The roosts consist of tables six feet long, twenty inches wide, and twenty inches high. The perch is made of a two by four scantling, dressed, made a trifle rounding on one side, which lays flat side down, resting on pins four inches high in each end of the table. The tables are kept covered with sifted ashes, or fine stable manure. The objection was that the wide roosts caused the fowls to have corns or caused lameness. Now, I have looked over all of my back numbers of the POULTRY KEEPER, to find a standard size and style, for fowls to roost on. I keep Langshans, and, as they have very long toes, they appear to like the roosts. If the younger ones fall off they land on the table or wide board, and can easily mount the perches again. My nest boxes, instead of being placed close to the further end of the house, set out two feet. This gives me room to enter from the rear to gather the eggs, by drawing the nest box out, and if a hen becomes broody and is allowed to set, I give her eggs and reverse the nest box by allowing it to face towards the wall, and then the laying hens cannot disturb her. The space between the roof and the nest boxes can be tacked over with some wire netting. I have often read that kerosening the roosts causes lameness. My explanation is, that any kind of grease or oils softens the bottom of their feet, the same as it does our hands, and would naturally cause the fowls to walk carefully, or apparently lame, over gravel or bare ground. My poultry yard is near a grain elevator and railroad switching-yard. I have access to the telegraph battery, and use the liquid solution that is thrown away to wash the perches with. When this becomes dry it is as white as lime and looks as well. It kills all lice, and hardens instead of softens their feet. I have never been troubled with gapes or roup among my fowls until this summer and fall. One Black Minorca chick had the gapes very badly. I washed out its throat with some of the liquid from the telegraph battery, two evenings about roosting time, and it was cured. I used the remedy on a hen that wheezed and rattled in the throat, similar to roup, with the same good result. I aim to keep the wind and dampness out of the hen-houses. I have lined my new quarters with tar paper. The floor is inch lumber, covered with building paper, over which is sprinkled fine stable manure. Size of the house, twelve by twelve feet, with a flock of thirty-five fowls, and all the ventilators closed. I expect to keep the temperature above freezing point the coldest night that may come this winter, the same as I did last winter, and I got eggs every day.

[The refuse from the battery is sulphate of zinc.—ED.]

BREAKING UP A HEN IS CRUELTY.

WM. GREVERUS, NEW HOLSTEIN, WIS.

The attention of the Society for the Prevention of Cruelty to Animals is most respectfully directed to the doings of a certain correspondent of the *American Agriculturist*, who, according to the last lines of page 102, October POULTRY KEEPER, writes: "These hens should be broken up at once; give her a companion, an active, vigorous cockerel."

I would call such a proceeding cruelty in an unqualified way; it is cruelty, not less than the submerging in cold water, the roasting, or other methods, whose cruelty is surpassed only by their ineffectiveness.

To "break up" a sitter is easy enough, but will the desired end of changing from setters to layers be accomplished thereby? No; not in the way people would have it. Broken up hens may start laying again pretty soon, but chances are that they will lay a few eggs and again be broody. This is because the condition of the hen which caused broodiness has not been changed, and cannot be changed by par force methods. King Solomon was not a fool by any means when he assigned. "a time for work and a time for rest." When a hen becomes broody it means that the egg-producing capacity of her system, for the time being, has become exhausted and that recuperation is needed. The first step to such recuperation nature indicates to be "rest." Certainly you can induce even an exhausted animal to exertion beyond its natural capacity, by using stimulants of various kinds—the whip, for instance, will drive even a tired horse—but the use of such stimulants is generally and rightfully defined as *cruelty*.

In the end you will gain nothing by such cruelty; and, after years of trying to find a better way, I am inclined to say with the editor of the POULTRY KEEPER: "Let her sit, she needs a rest, and the sooner she gets it the sooner she will recuperate her laying condition."

After allowing them to sit for from ten to twenty days, I would confine them in a room, or coop, without nests, never alone, but a number of them together, *without*, however, the company of a cockerel. During such confinement I feed them according to their condition; give them grass, meat and milk, if they are fat, and add a liberal allowance of grain if they are lean. My experience being that they are often lean, the opinion of the POULTRY KEEPER to the contrary, notwithstanding.

In conclusion I would respectfully ask, how the editor came to insert that article on "Broody Hens," on page 102, October, it being in direct opposition to the views of the POULTRY KEEPER, so often and able expressed.

[We give the views of others, whether they agree with us or not.—ED.]

MR. WHEELER'S EXPERIMENTS.

DR. A. C. GRIFFIN, WHITESTONE, N. YORK.

I was interested in Mr. W. P. Wheeler's experience, as given in POULTRY KEEPER, page 98, as I have, since January, 1893, been keeping a very close record of food, eggs, etc., of several pens of fowls that I have. I have kept only one rooster in one pen. Other pens have never had a male bird in them. I simply kept him for breeding purposes, not for profit. I have an exact record of a small flock of twelve Leghorns, which I have kept for two years, or will have when the year is out. In regard to eggs for production, I think that their second year will equal their first. In one pen I have two breeds of fowls—Leghorns and Silver Wyandottes—and they strikingly illustrate the disadvantage of having different breeds kept on the same rations and same conditions. I wish to call your attention to an error in the tables of W. P. Wheeler's experiment. It is simply in the position of the decimal point. The total weight of the eggs is given as 7.23 oz., and it should be .723 oz. It is the same with the total number of eggs, .57 should be .357, or if correct, he must have an improved breed, and I shall hasten to at once engage several settings. I have not been able, as yet, to find any such difference as Mr. Wheeler does between his pens, in regard to the presence or absence of the cock; certainly nothing like 30 per cent., although they are somewhat ahead. I have not been able to keep as full a record as Mr. Wheeler did, in regard to the weight of fresh-bone, or weight of eggs, but have of food, and no eggs. If such an article will be of value to you, I could, at some future time, be able to give you the result of my work.

[The able letters of Dr. Griffin are always welcome, and we will be pleased to have him come again. He is correct about the decimal point, the error being due to the printer and not to Mr. Wheeler.—ED.]

ROUP—A REMEDY.

DR. DAVID DALTON, UPLAND, PA.

Roup is an acute, specific, contagious disease, beginning by an infection of the mucus membrane of the nose and throat, and characterized by a local exudation and glandular enlargement.

Causes.—Roup prevails as an epidemic, usually in the winter or spring, but may occur at any time. All the conditions of bad hygiene increase its virulence and favor its diffusion. The most prolific cause of roup is exposure to draughts or cold, damp air. When roup breaks out in a flock all the birds are commonly affected with it, if the healthy are not kept apart from the sick. The poison of roup exists in the exudations and secretions from the throat and nose, and it is chiefly by means of this that the disease is communicated.

Symptons.—The initial symptoms are those of an ordinary cold or catarrh. On attempting to swallow the fowl experiences difficulty. The throat, upon examination, shows general inflammation, discharge from the nostrils which is sometimes very putrid, discharge of a thin mucus from the eyes and swelling around the eyes, extending until the eyes are completely closed. Usually complete loss of appetite with intense thirst.

Treatment.—Upon the first appearance of the disease immediately isolate the bird in a warm dry coop. If roup is due to a germ, which I think is generally conceded, all treatment must be directed toward the extinction of that germ. In my own practice the following treatment has been very successful. From the drug store purchase one dozen Seiler's antiseptic tablets, which are composed of borax, eucalyptol, menthol, thymol, etc.; also one two-dram cone-pointed syringe and a small piece of sponge. Dissolve one tablet in half a teacupfull of warm water. Of this solution inject a syringe full, very slowly, into each nostril. With the remainder of the solution bathe the eyes and surrounding parts, using the sponge for that purpose and then dust the throat with sulphur. This treatment, if practiced twice a day, will effect a cure,

BLACK JAVAS.

J. R. RUBMAN, YARDVILLE, N. J.

In looking over the October number of the POULTRY KEEPER I was pleased to note the letter from Mr. R. W. Davison, relating to the Black Java's. I can confirm all that he claims for them, as I have bred them for some years, and know whereof I speak. The Javas have been overlooked and neglected since the craze for new breeds has been on, but you will find that many who dropped them for something new are now going back to the old love again. There is no breed more hardy, that grows faster, or matures earlier, for the size of the fowl than the Black Java. As table fowls they have few superiors, and as egg producers they have few equals either summer or winter. I had one pen of nine pullets hatched the forepart of April, 1892. They began laying the last of August and by October 1st were all laying. I kept an account of all eggs layed by this pen from December 1st to June 1st, 1893, six months, and the number layed was 914, or an average of a trifle more than five eggs a day from nine pullets.

EDWARD ATKINSON'S THEORIES.

DR. G. D. JOHNSON, ATLANTA, GA.

In a recent number of the *Southern Fancier* there appeared a formula for a scientific egg food, from the pen of Mr. Edward Atkinson, of Boston. The article is reproduced in the California *Fanciers'* monthly, in which Bro. Harker supplies an addenda as follows:

"This is the recipe of Edward Atkinson, the Boston Scientist, which he claims is the best and cheapest of egg foods. We give it for what it is worth, and we presume it is worth a good deal, even though it does hit rather hard at 'Scientist Jacobs' theory that oyster shells are of no value to the hen in manufacturing eggs."

I do not agree with Mr. Atkinson in his scientific egg food theory, inasmuch as he cannot make a saccharate of lime in the manner described in his formula. Neither can he make a free carbonate of lime by using ground oyster shells and skimmed milk. The idea is all right if it would work, but it wont. It is probable that when Mr. Atkinson was originating his formula he had an idea that by the admixture of skim milk, it would supply a sufficient amount of lactic acid to free the carbonic acid in the shell, thus making a free and soluable lime, but in this he is mistaken. The action of the heat in the baking process is not sufficient to calcine the lime in the shell, and the heat is too rapid to sour the milk to get the lactic acid. If he had said sour milk, instead of skim milk, there is a probability of some decomposition taking place, but even then the free carbonate of lime would be in such limited quantities as to be insufficient for the wants that he claims for it. Bro. A. probably means well, but I think he has made a mistake in this, and I do not think he has ever given it a practical test. When he does he will find that after the bread is baked, the powdered oyster shell is still in an insoluable condition. I guess Bro. A does not know much about chickens or their requirements, and we are all likely to make mistakes, but we hope Bro. A. will look into this further. It is not my wish to start a controversy on this old worn-out oyster shell business, but as far as an oyster shell supplying lime to make the shell of the egg, by simply grinding it up, or powdering it, it cannot be done. Where do the hens get their lime from that never see an oyster shell? Why, from nature, grasses, insects, the cereals, etc., etc.

Gobley says that the chemical analysis of the egg is as follows—Shell consists of carbonate of lime, carbonate of magnesia, oxide of iron, and sulphur. The white consists of water, albumen, mucus, soda, sulphur, and other saline substances. The yolk consists of water, vitellin, nuclein, palmatin, stearin, olein, cholesterin, phosphoglyceric acid, lecithin, cerebrin, coloring matter, and salts. If you were to take all these, and put them together, in the proper proportions, and give them to the hens as an egg food, the probability is that you would not get eggs any quicker. What a hen needs is not so much the principals of the egg, but the proper food and care. A stimulant sometimes is good, but must be given cautiously. This will act on the ovaries, and promote them to healthy action, and, by proper food and care, she can be made to lay at the will of the poultry keeper.

MOISTURE AND EGGS.

E. C. NICHOLS, LYONS, N. J.

After reading and very carefully considering that invaluable article in September number, page 89, "Something New on Moisture," the following experience and questions appeared to me:

After setting our hens each year, and testing out the sterile eggs, there will be more or less eggs broken in the nests, requiring a thorough washing of many of those remaining. A basin of warm water, brush and cloth are called into requisition, and after undergoing the necessary manipulation the remaining eggs are placed in a new, clean, nest and in due time hatch out eighty or 100 per cent. of strong, healthy chicks. Now, why does not this undue moisture have the effect mentioned in the above article on the "fissured cuticle or upper skin which covers the main shell," viz: "swell to a great extent and at once close the pores of the shell?" Is it not because the brushing and further manipulation necessary during the cleansing process *destroys* or *removes* this cuticle or skin?

But, again, it occurred to me, if this is the reason, why is it that a nest of eggs that has been carelessly placed in some exposed position and has become soaked, or a stolen nest out in the fields, exposed to a surplus of moisture, I say why is it there will so frequently be a surprisingly large hatch

The explanation of this appeared to me that it might possibly be due to this cuticle or skin becoming so impregnated, or saturated, with the natural oil from the hen's body while setting on them previous to this undue exposure as not afterwards to be effected by moisture.

These are simply suppositions, or theories, that I advance in the hope of bringing forth further discussion and information on that perplexing question, moisture.

THE LIGHT BRAHMA.—ABOUT FEED.

T. R. COMSTOCK, LITTLE ROCK, ARK.

We moved into this house January 23d, 1893, and brought a few fowls with us, one being an old Light Brahma hen, not less than twelve years old, a few Plymouth Rock hens, a few half crossed with a Plymouth Rock male and Light Brahma hens, a full blooded Light Brahma rooster, and a young one, not a year old. They were late commencing to lay, but on the 14th day of April I set the Light Brahma hen on fifteen eggs, and the next day set one of the Plymouth Rock hens on thirteen eggs. On the 6th and 7th days of May they came off with seventeen chicks. The old Light Brahma hen being such a good mother we gave her all the chicks. She ran with them until they were about as large as quails, and then she got killed, and so the chicks came up themselves the rest of the way without a "mother." We killed for broilers all that were not marked like the Light Brahma's. There is one pure rooster and one pure pullet, and five grades one-half and three-fourths Light Brahmas and the rest Plymouth Rock. On the 31st day of August the Light Brahma pullet layed her first egg. She layed every day until the ninth day, and then she layed a double yolk egg, and since that time her eggs have been some larger. She commenced to sit on the 12th day of September, on thirteen eggs, having layed an egg every day since she commenced, but the grades show no signs of laying yet. So much for the Light Brahmas.

What about the feed. We keep a boarding house and all the scraps are gotten up and put in a large pan in the yard, light bread, biscuit, pie-crust, cake, crackers, pan-cakes, celery (always raw), onions and meats of all kinds, cooked and raw; milk, sweet and sour, clabbered, and quite rotten. The hens have free access to this food, and it is in all stages, dry, damp, moist, wet and sloppy, and, as the Dutchman says, there is a "mariety" of it. Our fowls are exceedingly fat but we do not fail to get eggs. Our hens know nothing about grain. A man fed his team in our yard and they scattered on the ground about a pint of corn, and it was several days before our hens had eaten it up. In selecting the food, they take the raw meat first, then the other meat, and will eat nothing else as long as the meat lasts.

Now, if any one can beat this 2-40 record let them trot out their bipeds, and I will throw up the sponge and give them the belt. A hen setting on thirteen eggs of her own laying, and only six days over four months old. How high is that? Is it high enough to win?

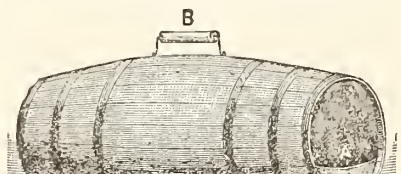
FRESH MEAT DOES THE WORK.

(SUBSCRIBER—NO NAME OR ADDRESS GIVEN.)

I would like to say a word in favor of fresh meat for poultry When fed to hens, there is a marked increase of eggs, and little chicks grow rapidly if fed upon it. I read that it should be fed two or three times a week, but I have fed it daily with very good results. In this part of the country we have many jack rabbits, weighing from five to eight pounds each, and they are considered quite a nuisance by the farmers, for they eat the bark off the young trees and help themselves to the best of the garden produce. Last winter it occurred to me that their meat might be fed to the hens. After removing the skin and entrails, I chopped up the meat with a sharp hatchet, cutting the bone also. I sprinkled some meal on the meat, so that the hens would get a taste of it. After the first one was prepared I could scarcely keep them away from under the hatchet while I chopped the meat. I wish to tell the readers of the POULTRY KEEPER my method of feeding young chicks. The first two or three days I feed them bread moistened with milk; after that I begin to add a little coarse corn meal to the bread and milk, making it quite stiff. I give them plenty of sand and chaff to scratch in, and all the millet seed they can eat. At the end of a week they are large enough to eat cracked corn, wheat screenings, rice corn, etc. Then I put as many as possible in a pen together, where nothing else can disturb them. The number does not matter much if the largest ones do not tramp on the smaller ones. I had 125 in one lot that were hatched at different times and they did nicely. At dark I place two or three dishes with wheat screenings in them, in the pen, together with a chopped rabbit and a dish of milk or water. This insures the chicks a good breakfast as early as they have a mind to get up and eat it. After I have had my breakfast, and can leave my work, I take the chicks another feed of cracked corn wet with water or milk. After they have eaten this I let them out to range at will. At noon I give them cracked corn again; at night, screenings, cracked corn or any kind of grain they can eat is given and more rabbits, if I have any. Plenty of clean water is kept before them all the time. In cold weather the first meal of the day should be warm, but for spring and summer I find the above way very good. I never had chicks grow as fast as they have this summer, and I think it is due to the meat and to having their breakfast as soon as it is light in the morning. I infer from several articles I have read in your paper that the POULTRY KEEPER furnishes plans for an incubator and brooder to its subscribers. I would like to experiment some this winter with an incubator, and would like very much if you would send me the plans. I have a glass thermometer, which was attached to a milk tank, that I think could be used with an incubator. I placed the bulb of it under a hen's feathers, directly on her breast and found it registered 104 degrees. Do you think I could use it? [Yes.—ED.]

A KEG DRINKING FOUNTAIN.

A drinking-fountain that will hold a large quantity of water may be made of a water-tight keg, such as a paint-keg that has been well cleaned out. The design by Mr. Louis De Mars, Los Angeles, Cal, is



explained in the illustration, A being a tin or zinc mouthpiece, on a line with the top of which (or half an inch below the line) is a hole, one inch in diameter, bored into the head of the keg. The keg is also filled with water at this hole, by standing the keg on end. B is a handle, for conveniently lifting the keg, in order to carry it from one location to another, and it may be made of wire, hoop iron, leather or rope. The keg is supported on two short legs, or pegs, which are placed near the ends. This fountain should not cost over fifty cents, and will hold a supply of water for a large flock.

THIS IS THE GENUINE ROUP.

Mr. M. C. Waite, Marion, Kansas, thus describes a disease among her turkeys. We hope that our readers will give her letter their attention, as she makes known just what the contagious scrofulous roup is. She says:

I have a disease among my turkeys which I do not understand. The head swells, the eyes become watery, the breath comes through the mouth, and the nostrils are closed. A bunch comes on each side of the face, under the eye. The birds eat well, and forage as though there was nothing the matter with them. The disease is contagious, for it was brought into my flock by a turkey coming here from a neighbor. I have raised turkeys for thirty years, and I never saw such a disease before.

Her turkeys still forage, and do not die, yet they are like *lepers*, carrying contagion to her whole farm. There is no cure because the disease is in the blood, and similar to scrofula. The best remedy is to destroy the whole flock.

LOTS OF LICE.

It is surprising that one finds it necesary to write us on matters so plain that it is almost impossible for them to overlook. Here is a letter from Sweet Home, Oregon. The writer thus describes a difficulty with his fowls, saying:

The hens began to droop, appetite poor, droppings thin and white, but later turn yellow. Some of them get blind, yet the eye looks all right No swelling about the head, a bad smell, no running of the nose, and do not drink much At first they cluck as if they wanted to sit. Some die in three or four days, others in two or three weeks, and some drop from the roost dead, with little or no indications of being sick. On opening one that fell from the roost I found a large deposit of blood: the heart and liver was enlarged. The hens have layed well all summer, though they have been poorly cared for. They are very lousy. House is open, with lots of mites in it. Their drink, most of the time, was dish water and milk. I feed mostly oats and some wheat.

The above tells its own story—*they are very lousy*. No fowl can live with lice. They will not only droop but die. Why the reader failed to see the cause is more than we can conjecture All the symptoms he described are due to the lice.

INSTEAD of oyster shells use sea shells. They are more convenient, and also more easily ground or pounded.

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

For Mr. Johnson.—Unless Mr. Johnson wishes to monopolize the carpenters who build poultry houses for $5.00, he would confer a favor by sending a *few* to Massachusetts. They can find employment twenty-four hours a day.—*Mrs. De L. S., Waban, Mass.*

Lost Lots of Time.—I have been taking the POULTRY KEEPER a very short time but am well pleased with it, and I feel that I have lost lots of good information by not subscribing sooner, but was not interested in poultry and cared nothing for it, but now I feel that it is a friend to the poultry raisers.—*S. E. Abbott, Barden, Ohio.*

Making a Hen Broody.—I wish to give my experience in making a hen broody. I took a two year old Wyandotte hen and penned her up until she was rolling fat; then I put her in a flour barrel, on twelve glass eggs, with the barrel covered over. I had a hole sawed in the barrel, about a foot from the bottom, for her to eat and drink out of. She stood on the eggs three days before she would set. Then I put the good eggs under her. She sat on them and hatched eleven chicks from thirteen eggs. I allowed her out every day in order to exercise. This was in January.—*Geo. E. Gue. Pittsburgh, Pa.*

From a Small Beginning.—Your paper has made me an enthusiast on poultry. I began last winter with four fowls, and I now have 108 Black Minorcas, besides running a grocery store. Am going to the country soon to look for a place. I don't want you to tell me how much I can make, for I read your paper.—*W. H. Whitmore, Scranton, Pa.*

A Sure Cure For Scaly Leg.—If you have the opportunity to test the merits of the following formula, I think you will find it a specific for scaly leg. Use a ten per cent. ointment of Losophan-Bayer, made with vaselin. First, clean off the scales with a hot solution of soda water, and then rub on the ointment. A friend of mine, who has some very fine birds, asked me to try my hand on removing scaly leg, and after repeated experiments this remedy proved highly satisfactory, removing the incrustations after two or three applications, and leaving the leg as clean and as smooth as a young cock.—*G. D. Johnson, Atlanta, Ga.*

Small Eggs. While reading the letters in the POULTRY KEEPER I have noticed a few notes on "small eggs." Here is another incident, where an old hen layed an egg weighing 186¼ grains, or nearly half an ounce by apothecary weight. I think Oklahoma takes the lead for small eggs. Allow me to say in conclusion that the POULTRY KEEPER is as much looked for as ever.—*J. C. Clark, Norman, Okla.*

Three Times a Day.—I happened to stop at the house of a friend to whom I had sold nine Buff Pekin Bantams, and he had tired of them and was willing to sell them for what he paid for them, so I bought them. They have turned out to be handsomer than the ones I saved for myself. The experiment which I have been trying is working all right so far. In some of the cases some of the hens have stopped laying In fact, most of them have, but I must not be unjust, so I will say it is on account of their moulting, but some of the young hens have commenced laying where I feed three times, and where I have fed twice, they have not commenced yet. I expect to have all hands at work again before the first of the month though, and will report once in a while how they are getting along, but I know that those that get hot table scraps at noon will do better than those that do not.—*Jas. N. Fitch, Yonkers, N. Y.*

How He Got Good Hatches. I thought I would tell you about how I manage my incubator. I put in, under the egg trays, dry sand where they have saw-dust. I put this sand in when I put in the eggs, and then on the twentieth day I dampen the sand and I have no trouble with hatching if my eggs are good. I put six dozen eggs in and hatched fifty-three chicks, as fine as you ever saw; I now have fifty of them, three having died. I take the POULTRY KEEPER and find that I could not get along without it. I thought I knew something about rearing chicks, but I find that the POULTRY KEEPER takes the shine out of me. My incubator is a good machine and holds 300 eggs. I expect to run two this fall, winter and spring.—*Nelson Price, Bargaintown, N. J.*

Eggs By the Car Load.—I have a fine lot of Brown Leghorns and the pullets are beginning to lay. There is much interest being taken in poultry in this region, and last winter we shipped several car-loads of eggs from this section.—*Smith E. Evans, Birmingham, Ala.*

Only a Cent a Week.—Your paper, the POULTRY KEEPER, cannot be beat, and it is worth a hundred dollars a year to any man in the chicken business. It hits the bull's eye every time. Times are mighty bad when a man cannot spend a cent a week for the good it contains.—*Edward J. Alcorn, Gloucester, N. J.*

A Long Distance Hatch.—I had such a remarkable hatch out of two settings of Light Brahma eggs, which I received from Alfred Doyle, Ill., this spring, that I think it is worth mentioning to you, considering the long distance they came by rail. They were roughly handled, as one of them was broken in the basket. Fully eighty per cent of the eggs were fertile, and the chicks grew fast. Cockerels at four mouths old weighed, on an average, seven pounds, some more, some less. Pullets weighed four pounds and seven ounces. I think I could have made the cockerels weigh eight pounds each at the age mentioned, as they were not fed extra. They did not get cut bone, meat or corn; they just had two meals a day since six weeks old.—*John D. Ferguson, Picton Landing, Canada.*

Slaughter by Dogs.—Mr. A. Williams, residing on Boundary street, Winnipeg, Manitoba, was awakened on the morning of the 22d inst., at the instance of his poultry, which was making much noise. Proceeding at once to his poultry, he discovered two fox terrier dogs within the poultry run. Of course Mr. Williams began to administer a very hot reception to such unwelcome visitors at that time of morning, 3:30. One of the dogs mounted the fence, but the other had to be *assisted* out. Mr. Williams then went back to bed, little thinking that the intruders had gotten into the chicken house, which he found, however, later in the day. They had visited the house first, killed forty chickens, including all his prize winning stock. Mr. Williams feels his loss very much indeed. It has taken him four or five years to accumulate said stock. He estimates his loss at $200. Being asked if he intended to continue keeping poultry, he replied that he never felt more inclined to do so.—"*Correspondent,*" *Winnipeg, Man.*

Poultry House.—I expect to keep about thirty hens this winter, but next fall I intend to have as many as 100 hens. I will start to build my new hen-house in the spring and have it all completed by July or August. It will be fifty feet long, twelve feet wide and seven and one-half feet high in front by five feet back, so you see it is going to be almost flat, only enough to turn the water. I will give you a plan of it in my next letter. *Francis Bliss. W. Fitchburg, Mass.*

It Don't Seem Possible.—It does not seem possible that so much solid reading matter on the care of fowls could be contained in one issue of the POULTRY KEEPER. The man who keeps poultry, either for pleasure, or profit, and cannot afford the POULTRY KEEPER is certainly to be pitied. May it grow and prosper.—*J. B. Crankshaw, Hampton, Va.*

Black Javas.—Mr. Davidson, in the October number of the POULTRY KEEPER, speaks of the Black Javas just right. He knows what he is talking about, and I think that I do too. I think the Black Javas are as good as the Brown Leghorns. I have nine hens and a cock, and some chicks also. They are the pure article as you call it. I consider them almost as good as the Light Brahmas, in some points. I breed all the kinds I have spoken of, and also the Black Breasted Red Game Bantams. I will probably send in my ad. next spring. I intend to compete at the poultry shows this fall. The POULTRY KEEPER is just the thing. I wish more persons would give experiences, as "practice makes perfect.—*C F. Long, Jackson, O.*

His First Experience.—I am keeping now forty spring chickens, pure breeds, of different kinds, which I hatched and raised in an incubator, it being my first experience with incubators or chicks. I had fair luck in hatching in an incubator, and good luck raising chicks in a brooder of my own make, but this I owe principally to your paper, of which I have been a constant reader, and have become much interested. I have loaned my papers and recommended them to others. I am only keeping chickens for pleasure, as I am very fond of them. —*H. E. Floyd, Glen's Falls, N. Y.*

A Thermostat.—In the POULTRY KEEPER of December, 1887, there is shown a cut of a thermostat, or regulator. Kindly advise me if any of these have ever been used by readers of the POULTRY KEEPER that you know of, and on which side of the steel bar the rubber bar is placed. As it is shown in the cut, I should judge it was on the upper side. I have a thermostat, which I think will do the work, having used it to regulate the temperature of a room, keeping it at seventy degrees at all times. I have made one of your hot water incubators, have placed this thermostat in it, and I find I can hold the temperature at almost any desired degree. I will let you hear from me again as to what success I have with it, and will then give you a description of it, so others can make one without any great expense.—*A. C. Weidenhold East Chicago, Ind.*—[We know of no one who has reported its use.—ED.]

Minorcas.—I have been taking the POULTRY KEEPER nearly a year now, and think it a splendid paper. The first copy I ever seen was in Iowa last winter, while there on a visit. I am often amused in reading the differences of opinion of the numerous breeders that write you. Mr. T. R. Comstolk, of Little Rock, Ark., would like to know what a Black Minorca is. If he will

just take a little sail up the Pacific coast till he gets to Humboldt Bay, and lands in Eureka, we will be pleased to show him that Black Minoreas are as pretty a fowl as he would wish to see. Last spring I went to Mr. M. F. Stellwagen, St. Ignace, Mich., for a setting of Black Minorca eggs. They reached here in good shape, but I had little faith that they would hatch after such a long journey, but the third of July I had my hatch, and seven of them I have raised, and I never had such strong hardy chicks as they are, and such beauties, too. I have four pullets and three roosters. My husband and I make great pets of them, and can pick them up most any where. We have other fowls but the Minoreas are my select.—*Mrs. J. N. Pine, Eureka, Cal.*

UNCLE MIKE ON HAMILTON.

When Editor Hamilton, of the *N. E. Fancier*, gets an advertiser who pays promptly he puts him on the first page and plasters the "taffy" all over him. This is the way he lathered the face of the latest gentleman:

"Frequenters of the shows and fairs for the last ten years will remember Mr. Edwards as a persistent and successful exhibitor. His birds have always been in the front rank, and his prize cards will cover a barn door. This season he has raised about six hundred birds, all of them dandies, and some of them Jim Dandies. In his last hatch, in April, he set ten hens all at one time, with 150 eggs, and with three killed in the nest, he took off 141 strong lively chicks. This is a good showing for the health and vigor of his stock. Mr. Edwards may be called a busy man. He works in New Haven, going to his business at 5:30 in the morning and returning late at night. In raising the six hundred chicks he picked up the hens and set them after dark, cared for the chicks at break of day, and, after most people are resting in the arms of Morpheus, he spends hours in making chicken coops and general tinkering. Besides all his regular work he has caught 109 rats, shot five cats and 209 sparrows. This is the kind of stuff that makes a real, genuine hen fancier.

Good. Mr. Edwards' prize cards will cover a barn door. More—he raises not only dandies but Jim Dandies (a New England expression, we believe), and he has 600 of them. Then it seems that Mr. Edwards (whose birds no doubt are good) works in New Haven, starting for work at 5:30 in the morning (awful), and returns *late at night* (pretty dark), yet he raised 600 chicks, caught 109 rats, shot five cats, and slaughtered 209 sparrows. As these chicks were not hatched later than April, and Mr. Edwards is only at home on Sundays, the question of how many fowls one man can attend to is settled, for it is simply a problem in single rule of three, as follows: "If a man can raise 600 chicks to maturity when he is not at home during the day how many can he raise by staying at home."

We took the above to Uncle Mike, who read it, knocked the ashes out of his pipe and refilled it, after which he remarked: "Why that is nothing. When I lived at Claremont, down on the James river, in Virginia, some years ago, a neighbor of mine had a thousand hens and five hundred ducks. He thought nothing of hoeing ten acres of potatoes a day, besides chopping four cords of wood in the morning and six cords at night. That man worked so hard that you could see the steam rising from his elbows, and his breath caused a fog for a mile around. After all this he would walk thirteen miles at night so as to get *exercise*. Oh! Edwards is nothing. Hamilton can't touch that Claremont man."

"But what about those thousand hens and five hundred ducks" we asked, "did he attend to all of them, and did they pay."

"No," said Mike, with a sorrowful voice, "*these* hens *died*. But that man could just knock the spots out of Edwards on work, and Hamilton can't come any of his exploits on me."

Then we left Uncle Mike alone with his pipe.

A FEW INQUIRIES.

Mr. W. F. Burr, Wichita, Kan., sends us the following, which is a number of questions. He desires to keep as many hens as possible on the least space, and says:

"We are just starting in the poultry business, and have almost everything to learn. We have about 150 hens now, and intend to buy as many more as we can properly shelter. We are using a room or roosting 8x24 feet, covered with tarred paper on the east, north and west sides, and have a scratching room 16x24 feet adjoining the roosting room. We have a room 24x50 feet, nine foot posts, sided with twelve inch boards, well battened with shingle roof. We thought to divide this room into three rooms. It has a bottom floor but no upper floor.

We would like to put at least 100 hens into each of these rooms. Would it do to make the partition of poultry wire with two twelve inch boards at bottom? Will it be necessary to have a top floor? Had we better make yards and keep each lot separate for this winter, or let them run? We have plenty of room outside. Would it be difficult to keep so many together healthy, if well cared for?

In reply, we will state that we do not advise *upper* stories. Each fowl should have about ten square feet of room in the house, or at least seven feet. The room mentioned above should be divided, as mentioned, and being 24x50 feet it will easily accommodate 100 hens, and the wire partitions are also excellent, though the bottom boards should be three feet high. It is also better to keep each flock separate. The house may be divided into five apartments.

CAN'T RAISE HIS CHICKS.

The following letter from a reader at Wauwatosa, Wis., is worthy of being read. He gets good hatches but cannot raise his chicks, and writes us as follows:

"I started in the business last March, and bought two incubators and brooders, capacity of incubators 500 eggs each. The first hatch did not come out very well, 409 chickens from 681 eggs, and I lost nearly all of them when between three and four weeks old. The second hatch was better, 584 chicks out of 625 fertile eggs. The trouble is that I cannot raise the chicks. When between two and three weeks old they get diarrhœa. The book I got with the machine says: "First week ninety to ninety-five degrees, second week eighty to eighty-five; and so on, but I think that is too warm. I keep the brooder shut for the first four or five days, and whenever I feed the chicks the water adheres to the glass top, and it is a damp heat in the brooder. The book does not say whether to let the chicks out of the brooder the first day or the first week."

The most important point which should have been mentioned to us was the *kind* of incubator and brooder. If it is a brooder (he has only two) that holds so many as were hatched, with no other shelter than the brooder, we cannot give any information, as brooders should be in a *warm* room where the chicks can go in or out at any time.

About nine-tenths of the inquiries are in regard to how best to *freeze* the chicks; that is, how best to ventilate. In the above case the chicks died as the heat was reduced, yet he considers they were kept *too warm*.

If it is a rat-trap brooder the chicks cannot be raised at all. No moisture should be on glass in a brooder. It is not necessary to keep air out—warm air. It is not essential for air to be cold to be pure.

Keep the brooder from ninety-five to one hundred degrees. Keep the *room* in which the brooder is placed at ninety degrees. Treat the chicks just as you would a baby Do not let a breath of *cold* air blow on them. If you wish fresh air warm it first. No chick will live in a temperature of eighty degrees any more than will a new-born baby.

Every reader should get the August, 1892, issue, which would be valuable.

Whenever a brood of chicks have diarrhœa it is a *sure sign* that they have been chilled and do not get enough warmth. No kinds of feed has anything to do with it. It is *lack of warmth always*.

WARTS OR SORES ON THE HEADS.

Mr. A. P. Chamberlain, Denison, Texas, writes us as follows in regard to a trouble he has been having with his fowls. The greater number of such cases always come from the south. He says:

"My chickens have been attacked with a disease that is new to me, and thus far I have been unable to find any one who knows what it is. It starts with a sore about the head, and finally gets to look like a wart, and it eventually spreads all over the head, particularly about the eyes, comb and wattles; also in the corner of the mouth. I do not know whether this is the same disease or not, but some of them have a cankery substance in the mouth, on the roots of the tongue, and in fact all over the inside of the mouth. It is a milk-white looking substance at first, and finally turns to a green looking color. I have lost only two so far. My son claims to have found a white worm in one of the warty-looking sores I was at first advised to use salt fat meat, by rubbing it on, but I can see no good in that; I tried coal-oil and believe it is doing some good, as some of the warts are drying up and coming off; but I hardly know what to do with the canker in the mouth. Am trying a weak solution of copperas water. Please give me what information you can on the subject.

The symptoms are somewhat those of chicken-pox, but no doubt the fowls have the usual "sore head" disease so peculiar to that section. The best remedy we have heard of is equal parts sweet oil, crude petroleum, cedar oil and spirits turpentine, a few drops well rubbed on the head, face, comb and eyes once a day.

A LARGE ESTABLISHMENT.

Mr. G. A. McFetridge, who was recently the manager of the large duck farm at Speonk, N. Y., and who is author of McFettridge's book on ducks, which is sold by us, sends us a letter correcting a mistake in our last issue. He is with Mr. W. H. Truslow, at Stroudsburg, Pa. He has a capacity for 9,000 ducklings (not 900, as we stated), and gives an account of his plant. He says:

Allow me to ask one question. Did I mark 900 ducklings? If so, I missed putting one cipher, as it should appear 9,000 instead of 900. We will have one of the finest equipped plants in the United States. We use lots of green bone, which costs us fifty cents per 100 pounds. We cut it with the Mann power mill We have a six-horse power engine, and an eight-horse power boiler. Also a four-horse power boiler which we use as a steam generator for cooking roots, steaming clover hay, and heating water to scald with. We have numerous springs of ice cold water, which is forced by a ram to the brooder house. The yards for the breeders border on a large pond. They are divided into four yards of several acres each. Each yard contains 130 ducks, with unlimited range. We feed our breeders twice per day. The feed we are feeding now consists of two parts meal, one part bran, one part No. 2 flour, one part cracker, one part green bone, and six parts greens. The greens that we are using now are rape, turnip tops and rye. We are now starting to build a feed house, which will be a model. This will be located near the pond. There will be a track on trestle work to run a tramway across all of the yards to carry the feed for the ducks. Joined to the feed house will be the picking house. All the water used in this building will be brought from a spring about 150 feet distant with a head of twenty feet above the floor of the feed room. The flow of this spring will fill a two-inch pipe; this can be run trough the tubs where the ducks which have been picked are in, thus keeping them clean and cold without any labor. Our railroad service is the very best The New York, Susquehanna and Western railroad runs through the place, with the station one-third of a mile away. The Delaware, Lackawanna and Western is about one and a half miles distant.

Stroudsburg has 6,000 inhabitants, electric and gas light, and also street cars. It is the county seat of Monroe county. When we get things in running shape we want you to make us a call. We have five hot water incubators, and have two Prairie States, and have ordered twenty more of the Prairie States. The Prairie State Company has lately put on a large force to build them. We are hatching chickens now, and we will fill up the brooder house with them, which will hold about 6,000.

Mr. McFettridge is one af the most experienced raisers of ducks in the United States, and has met with success. He is accustomed to raising them by the *thousands*, and we predict that there is going to be a "big thing in ducks" around Stroudsburg as soon as he gets his sleeves rolled up.

CELLAR FOR AN INCUBATOR.

Where to put the incubator is a matter for consideration. Mr. J. W. Isler, of Saulston, N. C., makes an inquiry in that direction, as follows:

Please state whether ceiling an incubator room, which is dug in the ground, will dry the atmosphere, or would you prefer a house for the purpose built up on the ground. I have been running a Monarch incubator for four years, and expect to buy another this fall. I find that I have too much moisture.

Mr. Rankin has his incubator house *partly* under ground, and he has excellent hatches. Any place will answer for an incubator room that has but few windows. The moisture can be easily carried off with a top ventilator. The object should be to maintain an even temperature in the incubator house. In a warm climate the house is perhaps better if on the surface of the ground.

THE *American Stockkeeper* and the POULTRY KEEPER for only $1.40—a weekly and monthly.

WHAT IS THE MATTER?

The *Southern Fancier* and the *Poultry Bulletin* are having lots of fun, but they do not know that there is such a thing as laughing when the laugh is really against them. Witness the following concert. First is the *Bulletin*;

"Contrary to all claims oyster shells do *not* provide lime for the shells. The shell material is derived from the *food*, which contains plenty of lime. Oyster shells are insoluble. They simply provide grinding material."—*Fanciers' Review.*

The above is as clear a sample of buncombe as can be found anywhere. It is downright nonsense, and we are astonished that Brother Darrow should have permitted it to appear in the *Fancier*, which, as a rule, is kept free from out-and-out misstatements. However, we do not suppose it has deceived any one into discarding shells.—*Bulletin.*

And then comes the *Fancier*, ready to burrah, as the following item will show:

"Hurrah for 'Scissors'! He gives a vicious jab with his instrument into the abdomen of Bro. Darrow of the *Fanciers' Review*. But Bro. D. deserved it. For he said that 'oyster shells do not provide lime for the egg shell; that the lime is derived from the food,' and some more such rot. But old Scissors calls it 'a clean sample of buncombe, downright nonsense.' Right you are Scissors and we're with you!"

Now, Editor Darrow can stand the above very well, even if it is styled *rot*. Oyster shells are not at all necessary, and some hens have never yet seen such things. If the two jolly editors mean to infer that the food eaten does not contain lime for the shell then "where ignorance is bliss 'tis folly," etc. Oyster shells simply provide grinding material. The subject has been discussed until it is threadbare. Even Mr. Wheeler, who withheld all lime food from hens, and piled oyster shells in profuse plenty around them, was not sure that the shells were of assistance, but he knows, and everybody knows, that a variety of food will contain all the lime necessary. We have a flock now laying, every shell perfect, but the hens never saw such a thing as oyster shells.

HOMŒPATHIC REMEDIES.

For the information of those interested we give below the homœpathic remedies for diseases of fowls which have before appeared in the POULTRY KEEPER, but which are repeated by request. Give five pellets at a time, or dissolve ten pellets in a gill of water, confine the hen, and give no other drink:

Diarrhœa is treated with ipecacuanha. If from faulty feeding give *arsenicum*.

Loss of appetite, when the hen is feeble, give *arsenicum*, and if no benefit results give *nux vomica*.

White comb, which has its origin in the formation of a vegetable parasite, is treated with sulphur, followed by *staphisagria*.

Convulsions, which usually occur with over-fed fowls, is treated with a few doses of *bryonia*, followed with a dose of *nux vomica*.

For roup, separate the sick birds from the others, feed on soft food and give *spongia*. It is said to be excellent.

Ordinary discharge from the nostrils should be treated with *mercus vivus*. In all cases of fever give *aconite*.

Dropsical hens should be destroyed, but the remedy used, if necessary, is *lycopodium*.

For worms of all kinds sulphur is considered the best remedy.

When hens are weak and debilitated from moulting give *natrum muriat*.

One of the reasons why homœpathic remedies have not been used more extensively is because that they must be given frequently, but this difficulty is avoided by dissolving the pellets in drinking water. If the hen is too sick to drink or eat, the water may be poured down her throat in teaspoonful doses.

We desire to call particular attention to the roup remedy—*spongia*—which has been tried quite extensively, and found to effect a cure when all other remedies failed. We would be pleased to have readers give it a trial and report the results. If it is all that it is claimed for it the fowls will be saved from loss from the most fatal disease to which they are subject.

Many druggists keep the homœpathic medicines, but if not easily procured from druggists they can be obtained from physicians of that class, or from homœpathic pharmacies. They are put up in small vials, the price ranging from ten to twenty-five cents, according to the size of the vial.

A POULTRY house should not be colder than forty degrees above zero. The hens do not desire the house too warm. It is the damp weather that affects them the most.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates, 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

To THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

YOU can get this paper six months on trial for only twenty-five cents.

KNOXVILLE, TENN., expects to have a poultry show January 18th to 21st.

WE would like an article from some kind reader on cold storage, and how to build a cold storage house.

IT is reported that Mr. John D. Mercer has returned to Los Angelos, Cal., to live. If so, the breeders in that section are fortunate.

THE Concord Poultry Club, of Concord, Mich., will hold a show December 28th to 30th. Mr. James A. Tucker, Concord, is Secretary.

WE offer Kuhn's "Breeder's Order Book" and "Breeder's Egg Record and Account Book," now published under one cover, at 25 cents.

THE Boyer Valley Poultry Association will hold its show at Missouri Valley, Iowa, December 5th to 7th, inclusive. Mr. C. C. Dorr is Secretary.

For seventy cents you can get the *Fanciers' Review* and POULTRY KEEPER. For one dollar we also add *Farm Poultry*, making *three* poultry papers.

IF you want a *weekly* poultry paper, and the best of its kind, send for a sample copy of the *Fanciers' Journal*, Philadelphia. We club with it.

THE catalogue of the American Black Leghorn Club is now ready. All interested in the breed should address the Secretary, Mr. Geo. Udall, Jr., Morristown, N. J.

SEND to us and get the *Standard*, which describes all the breeds, from the beak to the toes. Price $1.00, or $1.25 with the POULTRY KEEPER one year.

Poultry Topics has removed from Decatur, Ill., to Warsaw, Mo., its former location. Mr. F. H. Betts is editor, and the paper is working over a good field.

THE North Baltimore, Ohio, Poultry Association will hold its show January 25th to 27th, inclusive. Mr. G. B. Smith is Secretary, North Baltimore, Ohio.

READERS who have written us, and signed "Subscriber," "Greenhorn," etc., should send their full names. We are compelled to reply to them by mail. We cannot use letters with anonymous signatures.

THE Agricultural and Poultry Society of Mifflin county, Pa., will hold a Fair and show at Lewistown, Pa., in the town hall, December 5th to 7th. Mr. A. T. Hamilton, Lewistown, is Secretary.

HERE is a remedy for roup, given in a poultry paper: "A teaspoonful of glycerine and a few drops of nitric acid to a pint of drinking water will generally cure a fowl that shows symptoms of bronchitis or rattles." The remedy shows how foolishly one may make suggestions. The *compound* is the deadly nitro-glycerine, though it has an innocent appearance on paper.

NOTICE our announcement of a sixteen page weekly religious paper and the POULTRY KEEPER, both one year for seventy-five cents. We can heartily recommend *Sabbath Reading*.

ALREADY 1,500 birds are pledged for the Northwestern Poultry Association Show, which will be held at Sioux City, Iowa, Dec. 12th to 15th, inclusive. Mr. W. S. Preston, Sioux City, is Secretary.

THE *Dog Fancier*, Battle Creek, Mich., and the POULTRY KEEPER, both for seventy-five cents. We thus supply you with a paper devoted exclusively to dogs for only twenty-five cents extra.

THE third annual Poultry Show of the Southwestern Wisconsin Poultry Association will be held at Richland Center, Wis., Nov. 25–Dec. 1, 1893. Mr. E. A. Toms, is Secretary.

MR. JOSEPH L. RIDAY, of Coatesville, Pa., proprietor of "Gordon's Poultry Food," has passed away. Mr. Riday had hosts of friends, and he will be missed from the shows, as he was always obliging and kind.

THE "Great French Preserving Process," sold at the Chicago Fair, is one that has been given away by us, in the sulphur process, (Sept. 1887. issue), and repeated by us, yet they were selling it right along to all who would buy.

THE Seattle (Wash.) Poultry Club will hold an exhibition of Poultry and Pet Stock from December 25th to 30th inclusive. Theo. Hewes, of Trenton, Mo. will judge. A grand exhibition is looked for. Mr. E. P. Bowditch, Seattle, is Secretary.

WE send illustrated plans of an incubator to any one who will send us two stamps for postage and stationery, and who will also send us the names of any person interested in poultry. Address, P. H. Jacobs, Hammonton, N. J.

MR. C. A. Sharpe, of the firm of C. A. Sharpe & Co., Lockport, N. Y., died October 22nd. Mr. Sharpe perhaps did as much to improve the breeds of poultry as any man in this country, and was a leading importer. His loss is a severe one to his family and to the poultry fraternity.

THE eighth annual exhibition of the Wapsie Valley Poultry Club will be held at Waterloo, Iowa, January 9-15, 1894, judging to be done by Mr. I. K. Felch, and the decimal score card to be used. For further particulars address Mr. John M. Parker, Sec'y, Independence, Iowa.

THE Warren County (Ky) Poultry and Pigeon Club will hold its first exhibition at Bowling Green, Ky., November 27th and 28th. The officers are R. F. Dulany, Pres; G. E. Townsend, Vice Pres., G. S. Hollingsworth, Sec'y and Treas., W. T. Sears, Show Supt.

The second annual exhibition of the Lancaster County Poultry and Pigeon Association will be held in Excelsior Hall, Lancaster, Pa., January 16th to 23d. Comparison system will be used. Premium list now ready. Mr. G. M. Woods is Secretary, Leaman Place, Pa.

THE First Annual Exhibition of the Howard County Poultry and Pet Stock Association will be held at Kokomo, Ind., January 9th to 13th, 1894. One of the World's Fair Judges, Mr. F. J. Marshall, Middletown, O., has been secured as judge. Send for premium list. Mr. L. C. Hoss. Kokoma, Indiana, is Secretary.

THE Rhode Island Poultry Association will hold an exhibition of poultry and dogs at the Music Hall, Providence, R. I., December 12th to 15th. In addition to the usual premiums, a $25.00 first and a $10.00 second premium is offered for the best display of incubators and brooders hatching and brooding chickens during the show. Also, premiums for turkeys, ducks and geese, both alive and dressed, and for dressed broilers, roasters, and fowls. Mr. Samuel Cushman, Kingston, R. I., is secretary, *pro. tem.* Premium lists can be had by addressing Mr. H. S. Babcock, Butler Exchange, Providence, R. I.

THE New Mexico Poultry Association has fixed upon January 23d to 26th, inclusive, as the time for its show. Mr. W. S. Lowe, Alberquerque, is Secretary. The show is being arranged by some of the most energetic poultrymen in that section, and it is intended to make it a success.

THE decimal score card system will be introduced for the first time this season in the West at the Maryville, Mo., poultry show, to be held January 3-5, 1894. Mr. I. K. Felch will act as judge. This will be one of the largest and best of the Western shows. For catalogues, entry blanks, etc., address the secretary, Mr. F. Parcher, Maryville, Mo.

IT is intimated that editor Hamilton is going into the boarding house business, at Danielsonville, according to the following from his pen: "Roosters that are a year or eighteen month old are as good as hens for the table. If, when they are no longer wanted, they are shut up alone and fed well, for about two weeks, they will be fat and tender."

THE Hendricks County (Indiana) Poultry Association will hold a ROUSING SHOW at Danville December 12th to 16th. Get *yourselves* and *birds* ready to attend it. Mr. F. L. Sewell will score the birds. Entry fees are low. The list of specials is long. For further information and premium lists address the Sec'y, Mr. O. P. Phillips, Amo, Ind.

THE Northwestern Ohio Poultry and Pet Stock Company, organized 1891, and incorporated May, 1893, will hold their Third Annual Exhibition in Tiffin, Ohio, January 10th to 13th, 1894. Mr. Sharpe Butterfield, of Windsor, Canada, will judge the show. The company offers liberal, regular, and special cash premiums, sparing neither effort nor money to make this show the best ever held in the State of Ohio. Send for premium list to Mr. D. S. Biller, Sec'y., 49 Main St., Tiffin, Ohio.

THE Cleveland Poultry and Pet Stock Show will be held in Cleveland, Ohio, December 14th to 20th, 1893. Mr. A. Stevens, of Wellesley, Mass., will judge the show except the Game varieties, which will be taken care of by Mr. F. G. Smith, of Buffalo, New York. The Game fanciers expect the largest display ever exhibited in Cleveland. The premium list is now out. Send to the Secretary, Mr. H. J. Schaaf, Brooklyn, Ohio, for a copy.

THE *Practical Poultryman* got ahead of the weeklies in its report of the A. P. A. meeting, and Editor Brandy gave a full detailed report, showing that he is full of enterprise. Our congratulations to him. The paper is published at Whitney's Point, N. Y., and it and the POULTRY KEEPER club together at eighty cents.

ONE of the greatest wonders of the age is a new system for playing the banjo or guitar. It is a complete diagram method by which any one can play at sight all the major and minor chords. Also, a perfect knowledge of the finger boards without the aid of notes or teacher. Price fifty cents, or eighty cents with the POULTRY KEEPER. When ordering the one you wish—say *banjo* or *guitar*.

CLUBS AND THEIR USES.

What is the use of a Poultry Club if it does not *club*. With all the advantages claimed by them we doubt if more than one or two were represented at the A. P. A. meeting to attend to their *Standards*. They meet and issue circulars, appoint committees to get up Standards, and then fail to be "on deck" when the time comes for action. Where were the Clubs at Chicago.

JUDGES BY TRADE.

There may be some editors who write much yet have but a few fowls. We may plead guilty to the charge, yet we *have had* nearly every breed in the Standard, and made poultry pay, only we now make the paper pay better. But there are only a few of the so-called judges that *own a single bird* and they will judge *anything*, even an ostrich or a band wagon. They are not *independent*, and are compelled to "look out for the future jobs." Some of them need instruction also.

VINDICATED.

The editor of this paper has been vindicated, and his past endeavors have been endorsed. Keeping aloof from the cliques at Chicago he saw the A. P. A. delivered over to men who cared only for self, and whose methods would have disgraced the closing days of a partisan legislature. If the members can stand the strain *we can*. It *proves all that* we have claimed.

MCFETRIDGE'S BOOK ON POULTRY.

This book, written by G. A. McFetridge, gives full information about the temperature for hatching; moisture; ventilation; how to trim the lamp; time card for incubators; brooding small chicks; food and care of ducks for breeders; feeding hens for hatching eggs; eggs for hatching; how to feed little chicks; how to feed young ducks; how to dress ducks for market; how to dress young chickens; the incubator house; brooder house; celery for feeding ducks; short notes; economy; sanitary conditions and medicines. Price fifty cents per copy. For sale by us.

MR. FELCH AND THE DECIMAL ASSOCIATION.

Now that the A. P. A. has a millstone hung on its neck the decimal score card association will have plain sailing. Starting with a chapter in Manitoba of fifty-six members, one in California of fifty-two members, and the East meeting them half way, the association has made more progress in one year than the A. P. A. has in twenty. What is more, the treatment accorded Mr. Felch at Chicago means that the new Association will not go outside of itself for a Standard, but will make one of its own. If it cannot get rid of politicians in any other way it will draw out and leave them alone in their glory.

MR. BOYER AND CROSS-BRED FOWLS.

Mr. Boyer, editor of the poultry department of the *Fanciers' Journal*, takes the editor of the POULTRY KEEPER to account for inconsistency in advising crosses at one time and condemning them at another. Apparently there may be grounds for his criticism, but we *have* advocated crosses for the benefit of those who *would* cross, suggesting pure-bred males, however. Really, we see no advantage in crossing, though crosses *will* be made, and we are compelled to suggest the best methods of so doing. There are readers of all classes to please, and it takes time to get the inexperienced to fully understand all that *should* be.

ALL ABOUT BROILERS.

This is a book for both the amateur and professional, and is by M. K. Boyer. It was written mainly to instruct the novice. Read the contents: Is Broiler Raising a Failure? How Much Capital is Required? How Much Land and How Much Time is Necessary? What are the Profits? Incubators, and How to Run Them. Brooders, and How to Manage Them. Feed, and How to Give It. Mistakes in Broiler Raising. Pure-breds for Broilers. Good Crosses for Broilers. How Broilers are Prepared for Market. An Egg Farm. How to Build Houses. How to Feed Laying Hens. How to get Fertile Eggs. How to Market. How to Fatten. Caponizing. Pure-breds the Best. Money in Ducks. How Large a Farm? Diseases and Remedies. Size of Breeding Pen. A Virginian's Egg Secret. French Lice Remedy. "Sauer Kraut" for Fowls. E. C. Howe's Broiler Food. Peterson's Feed for Laying Hens. Peterson's Feed for Young Chicks. Poultry at the Experiment Stations. Price twenty-five cents per copy. For sale by us.

A PHYSICIAN "ON FRESH AIR."

Our views on fresh air in the shape of ventilator draughts have attracted attention from a source somewhat unexpected. Dr. Howard M. Paine, of Albany, N. Y., in a letter to Mr. F. M. Mann (and not intended for us), says:

I notice in the November number of the POULTRY KEEPER an interesting account of your own history, but an article on *ventilation*, in which admitting cold air from above is held to be harmful, is a point quite as applicable to persons as to fowls. I will be glad to obtain a copy of the paper in order that I may cut out the article, so

as to be able to read it occasionally to patients. Can you send me one?"

We wish it understood that the stand taken by us is the result of *experience*, and we are pleased to be endorsed by such high and disinterested authority. One of the strongest proofs of the injury to poultry by draught is the slaughter of the fowls at Chicago. If fresh air is an advantage they had it in abundance, but it was a terrible infliction.

MISSOURI STATE POULTRY SHOW.

The Missouri State Poultry Show will be held in Warrensburg, Mo., December 12th to 15th, inclusive. They now have stock promised by members of the association that will fill an entry of over 2,000 birds. The officers are as follows: G. W. Fry, Dunlap, Mo., President; Sec., M. L. Andrews, Sedalia, Mo.; Assit. Secy., Rolla G. Carroll., Warrensburg, Mo.; Treas., C. B. Littlefield, Knob Nastis, Mo.; Executive Committee: Jno. E. Rundell, Lamar, Mo., Chairman; F. M. Durand, Springfield, Mo., and J. A. Ayers, Laplata, Mo. The officers have everything in fine shape and will have the best show ever held in the West.

PROFITABLE POULTRY FARMING.

This is a new book, just out, by M K. Boyer, and should be in the hands of all interested in making poultry pay. It treats of the growth of practical poultry farming; the requirements; the best way to begin; the value of crosses; the use of the thoroughbred; how to have hardy and prosperous stock; the success of artificial incubation; running an incubator and brooder on the farm; building an incubator cellar; colonizing the chicks; R. G. White's methods of feeding chicks; poultry as an adjunct; a butter and egg farm; size of hen yards for success; building hen houses for comfort as well as profit; feeding for eggs; Mr. Hunter's methods of egg farming; how to test eggs; poultry and fruit; broilers and berries; how the scheme works in Hammonton; specialties in vegetables; a general poultry farm; the Atlantic Duck Farm; duck culture for profit; size of houses; how the breeding ducks are fed; how the ducklings are fed; how to dress ducklings for market; and other useful points. Price twenty-five cents per copy. For sale by us.

BROKEN FLINT AND LIME.

Broken flint is prepared because it is *sharp*, as well as hard. It is superior to oyster shells because it has greater *cutting* power, and serves the purpose of grit more perfectly. In this connection we are reminded that even broken flint may be composed of *lime*, as is shown by the following letter from Mr. D. Lincoln Orr, of Orr's Mills, N. Y.

"In your November POULTRY KEEPER, on page 123, you have an article entitled, "Broken Flint as Grit," as follows in part. "Hard flint, crushed or ground, will some day be placed on the market," etc. I would wish to state that on page 126, November POULTRY KEEPER, I have an advertisement for just this very article except that, in place of flint, I have a lime stone, fifty per cent. lime. It is endorsed by the leading press and poultry men generally."

Of course *limestone* is preferred to all other substances. Limestone, marble (which is really limestone), oyster shells, clam shells, sea shells, and chalk are almost identical in composition, all containing *carbonate of lime*, and if oyster shells supply lime so will limestone. Now chalk is also carbonate of lime, but it is too soft to serve as grit, hence, in order to secure *sharp* and *hard* grit from a substance that contains a form of lime, the limestone should be preferred. As Mr. Orr is an advertiser we have no hesitation in giving the above, but our real object is to state the facts.

KEEP THE FLOOR COVERED.

One who has not used leaves or dry dirt on the poultry house floors will know nothing of the enjoyment of the hens from the use of litter until he tries it. When the floor is well covered the house will be warmer than when the floors are bare, the dampness will be lessened and the hens will keep at work. More cold winds come along the floor than from the walls, and this is avoided when the floor is well supplied with leaves or litter.

MENTIONINGS.

Editor Davis says that one of the most volumious writers in the land is "Ex." We see his name credited to articles in many of the journals. Will some one send us his address?

Kansas hens are said to beat all others in laying eggs.

A North Carolina turkey-gobbler recently scratched up eight potatoes in a garden and has been sitting on them for several weeks.

Mr. O. P. Phillips, Arno, Indiana, says that the Hendricks county show, this year, will be a rouser.

"Corn in the South" is the theme of Editor Davis, but he does not say anything of "corn in the ear," but admits that they use it in both the solid and liquid form.

Mr. H. C. Williams, Princes Bay, N. Y., believes that boys should be apprenticed for awhile to learn the poultry business, and makes his assertion strong by offering to take a boy for that purpose. Now, boys, here is a chance.

Mr. P. A. Webster, Cazenovia, N. Y., sent us samples of ground bone that had been cut and preserved a year. Not the slightest odor was perceptible, and the fowls ate it readily.

The $5 hand mills of Wilson Bros., Easton, Pa., are for grinding dry bone, shells, glass, charcoal, etc. For cutting green bone they offer the Daisy bone cutter.

Mr. Wm. H. Van Dorea, Buckingham, Ill., has been very successful this season in raising some choice Plymouth Rocks, White Leghorns, and Light Brahmas. He has been a breeder for many years.

Mr. W. C. Bayard, Walnut Hills, Cincinnati, Ohio, offers his grand strain low for buyers this month. Do not delay, but send at once and get prices and description. They are Buff Cochins, Light Brahmas, and Black Langshans.

Mr. James D. Fitch, Yonkers, N. Y., has had all of his plans ruined, fire having destroyed the whole of his stock except a few Houdans and Bantams.

The Island Poultry Co., at Island P. O., Va., is one of the leading establishments in that State. There is a wide field in Virginia for pure-bred fowls.

Game Fowls excel all others for the table, says Mr. Ide Rossiter, Girard, Pa.

Who wishes to sell eggs? Mr. C. O. Dingman, 18 Gansevoert street, New York city, offers to receive them, all the year round, at 25 cents per dozen.

The Bramhall, Deane & Co's. stoves advertised in this paper, is the one mostly used in brooder houses.

Mr. Geo. H Stahl, Quincy, Ill., has adopted the Page Safety Lamp for his incubators.

Galvanized wire netting is the specialty of Peter Duryea & Co., 215 Greenwich St., New York city.

Johnson & Stokes, seedsmen, at Philadelphia, supply everything needed for poultry.

Read that sheep advertisement in the POULTRY KEEPER.

M. F. Peck, 334 Washington street, New York City, makes broilers his specialty. He is a leading commission merchant.

Out in California the Santa Ana Incubator Co., Santa Arra, Calf., is having great success with their incubator.

Cut clover, all ready, is sold by the Harvey Seed Co., Buffalo, New York.

Incubator eggs are sold by J. P. Heilings, at Dover, Del., and he ships them to any distance.

Chicago breeders took no interest, comparatively, in the World's Fair Poultry Show.

C. A. Bartlett, Worcester, Mass., ships his O. K. poultry food to all sections. He has a large establishment.

"Doc" Johnson, in the *Southern Fancier*, does not seem to be a bit frightened of the "LL. D. Ph. D., Q. Q. Q." title of Edward Atkinson. "Doc." says that facts overcome high-sounding titles every time.

Judging at Chicago was like kissing. It went by favors. And it was actually appalling to notice the boldness and dishonor exhibited in giving some of the prizes. One or two judges seemed determined that one party should get the prizes at all hazards.

Quite a number are anxiously waiting to read the frontispiece description in Editor Hamilton's next issue. It is expected that he will dam Niagara.

One redeeming trait in the A. P. A. was that it protected women. The attempt to injure one was met by a severe punishment of the offender. The poultry business can be kept within the bounds of decency.

The twenty-five men who got into the A. P. A., without paying anything, so as to vote, are life members. They simply deprived Mr. Forsyth of the honor which would have been tendered him. At first it was reported that the number was thirteen, but out of the twenty-seven who joined only two of them paid anything.

POULTRY AT THE WORLD'S FAIR.

The American Poultry Association—Some Awful Judging—Politicians Rule the Roost—A Sheep Man Runs the Machine - Votes that were Bogus.

What was expected to be a meeting of poultrymen from all sections, with machine methods left out, did not occur.

Cattle sheds, dark and cheerless, with "*fresh air*" in abundance, provided the fowls with shelter. For a *World's* Fair exhibit it was a disgrace. Everything grown or produced in this country, or in any other country, received more consideration at the World's Fair than poultry.

The main guide to find the shed in which the assistant superintendent was placed, an dwho had the books of reference, was a large sign of "*Oxforddown sheep*," and no stranger not knowing the circumstances would suppose anything but *sheep* were in the sheds, while "*sheep dips*" were placed in the incubator building.

The sheep man, however, knew his business—he kept the sign up to the last.

The number of specimens in various classes was: American, 403; Mediterranean, 362; Asiatic, 314; Game, 173; Hamburgs, 167; Polish, 100; Game Bantams, 100; French, 42; English, 37; Miscellaneous, 12; Bantams other than Game, 164; Turkeys, 35; Geese, 30; Ducks, 40 pairs; Guineas, 6; Pea Fowls, 5; Pheasants, 10; Pigeons, 500.

Mr. Seeger, the Superintendent, acquitted himself with honor, and was not responsible for the accommodations. He was tendered a substantial reminder of the occasion by the exhibitors, and if any person had any objections to his appointment they were soon dispelled, as he was not only courteous and gentlemanly, but endeavored to do his duty impartially and with credit.

Mr. Richard Twells acted as Assistant Superintendent, and was too modest to even allow anyone to thank him. Rumor has it, and perhaps with truth, that Mr. Twells was the "power behind the throne." That is, he was the one who had the influence with the Fair directors, but he kept a close mouth and stuck to his work.

"Spatt's Patent," New York City, supplied the coops and made the arrangements. Mr. T. Farrar Rackham was the manager of the Spratt's Patent exhibits, which consisted of everything required for poultry, and he personally attended to arranging the coops.

Some of the judges seemed in fear of the "boss," for they whispered their objections and bated their breath. If men who have self-respect are compelled to act as servile creatures, not daring even to look to the right or the left for fear that they may not get a future job, then they would do well to try something else than judging rather than to sacrifice their manhood.

It is a painful fact that right near the door was a Plymouth Rock cock, with the first prize ribbon on his cage, said to have been judged by B. N. Pierce, whose comb was almost shapeless, and *whose tail feathers were clipped*. So glaring was this that it was plainly noticeable, and, when the attention of breeders and judges was called to it, the answer would be, "Got nothing to say." They would then hurry away.

The first prize Plymouth Rock *hen* was a *pullet*. Such was the verdict of nearly all who saw her. It may have been a mistake. The judge was said to be J. Y. Bicknell.

A Brown Leghorn cockerel that won had white on shank, and the cockerel in the second prize breeding pen had white in wing. A Black Langshan pullet that won had the outside toe only partly feathered, and not to the joint.

Several judges were discharged for inability to do the work. One man scored *six* Brown Leghorns in *one day*, the lowest score being ninety-five and the highest ninety-seven and one-half. He put in a bill for $87.

One exhibitor had entries in the name of his two sons, thus giving him *three* chances to any other exhibitor's one. Or, rather, he exhibited and his sons exhibited, which they had a right to do, from one standpoint, but no other exhibitor resorted to such a method, as the sons were in the family and young.

It took twenty-one judges a whole week to judge the birds, but the place was unfit and they had to perform much extra labor.

The number of dead birds daily was remarkable. "Fresh air" did it. It came through the barns in currents.

THE A. P. A. MEETING.

The annual meeting of the American Poultry Association was held, and but *five* persons from Chicago and vicinity were present. There was no interest taken in the election of officers, Mr. James Forsyth being named for President and Mr. Geo. O. Brown for Secretary.

The parties who managed the canvass for Mr. Forsyth must have been over confident, as they did not know of any opposition, and were not aware of the fact that Indianapolis trickery was to be repeated. Quietly an opponent, who is known as a politician, had worked over the ground, even informing parties that Mr. Forsyth was going to vote for him. When the A. P. A. met Mr. Forsyth had a clear majority, but there were twenty-seven parties in who did not pay a cent for the privilege of membership, with the exception of two.

Objection was made to these twenty-five votes before the election, but not by *motion*. The temporary chairman, Mr. Bridge, stated that *precedent* admitted of their voting. His decision was incorrect. *Such a thing never before happened.* The parties who managed Mr. Forsyth's candidacy had only to object, or appeal from any decision of the chair, but they made no effort to prevent these illegal votes, and Mr. Forsyth was beaten by *four* votes. He did not ask any one to vote for him, and could easily have been elected if experienced men had managed his canvass. He is a good man, highly respected, and it was a pity that he was permitted to be sacrificed so easily and without a murmur.

Those twenty-five votes had no more right to a voice in the meeting than the public. Mr. Forsyth could, with equal propriety, have gone outside and brought in twenty-five laborers, or men from the Columbian guard, whose votes would have been of the same value.

Mr. George O. Brown, of Baltimore, was elected Secretary. He had no opposition.

The editor of the POULTRY KEEPER, though preferring the election of Mr. Forsyth, took no part in the canvass. In fact, it is doubtful if any of Mr. Forsyth's friends solicited votes. The desire seemed to be to avoid the "scramble for positions," and to set an example for the future, but the Indianapolis methods were repeated. It is doubtful if the election was legal, and if there was any higher authority probably it would be so declared.

The result was a great victory for those who were opposed to *machine* methods, as the judging of some of the judges, the "working" of the bogus votes, the intimation to some of the judges that they were under "obligations," the "rough shod" methods and the outrageous awards by favorite judges are *proofs* of all that has been said of Indianapolis, and simply

(*Continued on Page* 141.)

WIND-BREAK FENCES.

The two designs of fences in this issue are intended to serve as combinations. First is the open wire fence, through which the wind sweeps. This is made by nailing the wire to a top and bottom strip, or narrow board. To the right, at A, is a roll of thick muslin, which may be fastened along the fence, to serve as a wind-break. It may be removed in summer and stored away, and should last two seasons. Second, as a protection against hens that fly over the fence, a strand of wire is fastened from post to post, at any distance above the fence that may be preferred.

The second fence has boards at the bottom, the boards being at least two feet high, to which the wire is fastened. The numerous strands of wire, over the woven wire, running from post to post, are intended to show that two or more wires may be used, and that, with high posts, a few strands of wire will answer all the purposes of woven wire, while the cost of the fence will be reduced to a minimum.

BROILERS IN A ROOM.

In an experiment made by us in the hatching of chicks with incubators and caring for them with brooders, the work was done in one of our large cities, on the fourth floor of a large factory building, which was, however, well lighted, and the warmth of the sun entered for a large portion of the day. When the incubators were started the intention was to take the chicks to a place in the country, but a sudden, heavy snowstorm prevented, and when the chicks were out it was too great a risk to expose them. They numbered about 1,000 and, of course, some place had to be provided for them, and that, too, without delay. Resource was had to putting a large stove in the room, the room being about 20x24 feet, with boxes for the chicks at night, the boxes being simply soap boxes, with the ends taken off, so as to allow the chicks to enter at either end. On the floor of the boxes finely cut straw was placed, and a piece of doubled muslin, wadded with cotton was suspended from the top of the box, to within three inches of the floor of the box, so as to just touch the backs of the chicks.

A constant hot fire was kept up day and night, and a boy was engaged to stay in the room at night to look after the chicks, the room being kept not lower than ninety, nor more than 100 degrees, all the time. The floor of the room was kept covered with plenty of wheat chaff, and cleaned daily. The chicks were fed every four hours, and millet seed, screenings and wheat scattered over the floor for them to scratch for. The windows were never opened except for a few minutes just after the chicks were snug in their boxes at night. Never did any lot of chicks grow faster, or thrive better than they. They remained in the room until they were ten weeks old, and they were then marketed, clearing forty-three cents each, over all expenses, and only six per cent. died, or less than one in sixteen.

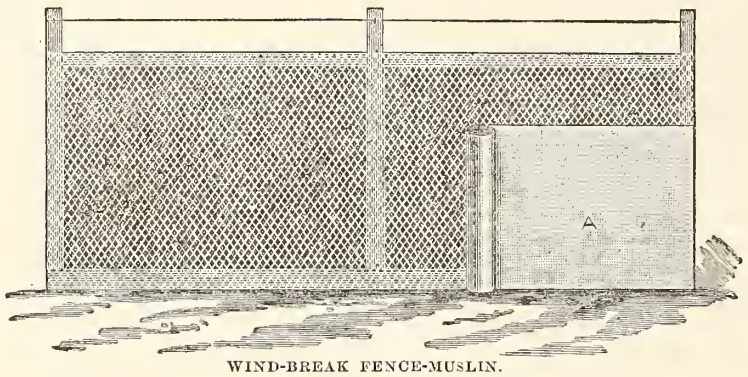
We are satisfied that a room that is lathed and plastered, well lighted and kept at a regular temperature, will answer better than a regular brooder house, and chicks can be raised in the heart of a large city as well as in the country. The secret of success, however, is that someone was present to see that the room was warm, and the chicks always snug and comfortable, both day and night, but it paid to have two persons attend to them. It is the careful supervision, the constant watching of the broods, that give success. The work and good judgment are the main factors in the management.

IN-BREEDING OF TURKEYS.

It is somewhat rare for a farmer to send away off for a a gobbler. He does not in-breed, for he secures his males from some point a mile or two away, and from a healthy flock. But it is a fact that the turkeys in a community, more than any other class of fowls, are more nearly related than any other, and it is a wise farmer who procures a gobbler that has not been bred in the same strains as his hens. The effects of the in-breeding of turkeys is more plainly shown in the lack of vigor on the part of the young than most farmers are willing to admit. The best way to avoid this is to send off to a distant point for a male, and if you do not object to crossing breeds, get a gobbler of a different breed (especially the color differs) from your hens, and the results will be beneficial.

SOME FACTS ABOUT LINSEED MEAL.

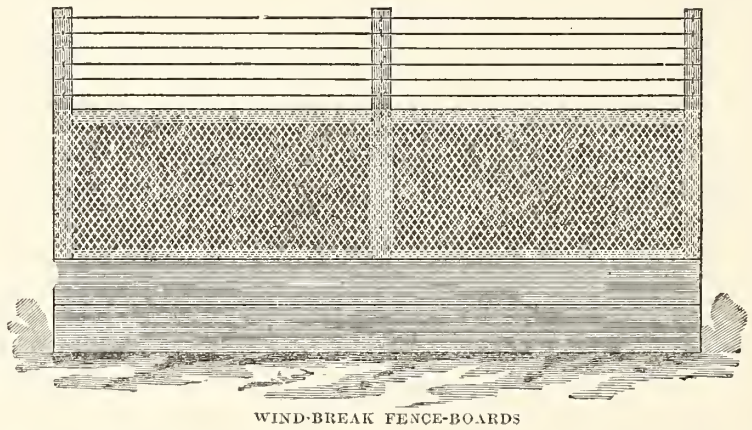
Linseed meal will vary in composition, and by leaving off the fractions it may be said to contain about thirty per cent. of protein, eleven per cent. of fat, six per cent. of ash, and thirty-four per cent. of starchy substance. The ash includes the mineral matter, such as lime, soda, etc., and the protein contains the elements for supply-the albumen of the eggs. It will be seen that it should rank high as a special food for poultry, and such is really the case, but it contains a very large percentage of fat and starch also (nearly one-half), which teaches the importance of feeding it with care. It may advantageously be used for balancing the rations of poultry as well as of cattle, but it has the same effect in causing them to fatten readily when fed too liberally. It is an excellent food to promote the general health, by preventing constipation, and it is as harmless as other foods. The proper mode of feeding it is to add it to the morning meal three times a week for a month, and then ceasing for a while, a gill for ten hens being amply sufficient, but something depends on the kinds of food allowed in the ration.



WIND-BREAK FENCE-MUSLIN.

ONE POUND EXTRA.

There is a difference of five cents per pound in the price of a "strictly choice" market carcass, of first quality. By fattening a poor fowl there is a greater gain in value than simply the addition of one pound extra. The poor fowl, weighing five pounds, at eight cents per pound, is worth but forty cents, but the six pound choice, bird, at thirteen cents per pound, sells for seventy-eight cents, making really thirty-eight cents for the extra pound gained. Does it not pay to fatten all fowls before marketing them.


WIND-BREAK FENCE-BOARDS

RATS DRIVEN OFF.

The difficulty in getting at rats is due to their being able to get into holes beyond our reach. We recently tried an experiment with success. Ordinary washing soda being cheap, we pulverized a few pounds, and every time we found a hole, into it went some of the soda. We kept all holes well supplied, and new holes were not overlooked. The rats became disgusted and left. Had we used concentrated lye they would have left sooner.

We send illustrated plans of an incubator to any one who will send us two stamps for postage and stationery, and who will also send us the names of any persons interested in poultry. Address, P. H. Jacobs, Hammonton, N. J.

MAKING A LIVING FROM HENS.

A large business cannot be done with a small sum. This applies to any and all branches of industry, and is a law that cannot be evaded. Many persons of limited means, who see no opportunities elsewhere, resort to poultry raising as presenting an easier and safer opening; but the failures are more numerous than the successes. This is due to underestimating the amount necessary for success, and the fact that, like other industries, one must wait until the returns come in, which is a difficult matter with those who have but little capital and who have their all invested in their business.

Quite a large flock is required to pay $1,000 a year. There is seldom over a dollar per hen clear profit, hence a thousand hens must be kept, in order to realize the amount named. Then there is the land and buildings, the cost of which, with the fencing, would be at least $1,000, all of which would be fixed capital. The food must be purchased as wanted, and many other incidental expenses will be met with that cannot well be estimated in advance, all of which would necessitate a working capital before any steps could be taken.

The hens must be procured, and cannot be purchased for less than fifty cents each; or they must be hatched and raised, which is the only sure way to success, as the purchase of stock would bring in disease, lice and worthless birds. This of course takes time, and nearly a whole year is thus lost in getting ready. In the meantime the poultryman's family must be provided for and his other expenses met. Another item, and the most important of all, is the labor. No matter whether the work is done by the owner or by hired help, it must be paid for.

It is not intended to discourage any one from entering into the poultry business, but to caution against loss. It is not wise to engage in any business unless prepared, and experience is also essential. One could not engage in any other business on insufficient capital. It is only after loss of time and labor that a business becomes established, and although it requires capital to keep large flocks, yet the poultry business, with good management, will probably give better returns than many other enterprises, and with plenty of capital, success is not difficult.

CARELESSNESS IN MATING.

It is sometimes surprising that good results are obtained with poultry when the most careless indifference seems to exist, in a large majority of cases, in the use of males. Some farmers act on the philosophy that a rooster of any kind will answer the purpose, and if any one who is interested in such a matter will but make an inspection of the poultry yards of his neighborhood, he will perhaps find at least three-fourths of the males used on the farms to be the most varied in size, color and plumage of anything that exists on the farms in comparison. Instead of aiming to improve their flocks with pure-bred males, the farmers seem to have a preference for non-descripts that possess not the slightest merit to commend them. That the poultry business is a paying one is due to the fact that it gives better results with mismanagement than should be expected.

PLENTY OF SUNLIGHT.

Sunlight is more agreeable to the hens than anything else. They abhor darkness, and will not accept a dark poultry house, preferring exposure to cold and sunlight than to warmth and darkness. A dark poultry house is nearly always damp and becomes a fruitful source of those diseases incidental to winter. The more glass used in a poultry house the more comfort for the hens. True, glass radiates heat during the night, but as fowls seldom suffer from cold if protected from winds, they will not be injured thereby. It is much better to have them in a warm and light house during the day, as they will be kept in greater vigor. With plenty of glass the wood of the house absorbs a large amount of heat, which partially recompenses for that lost by radiation, and as radiation may be lessened by the use of a muslin curtain to the window, the advantages secured by large windows will be beneficial to a great degree compared with compelling the hens to live in a gloomy place.

DAMPNESS AND NEW HOUSES.

A new poultry house will sometimes be damp when such does not happen with an old and well-seasoned house. This is due to the large amount of sap, or water, contained in the new lumber, which does not rapidly evaporate during the wet season. After the winter passes away, and the house is exposed to the dry heat of the summer, it becomes thoroughly seasoned, and the next winter less dampness is noticeable. Even when a new house is papered with tarred felt, or heavy paper, the dampness is noticed on the walls. This may be partially avoided by giving new houses one or two coats of oil or paint.

POSITION OF WINDOWS.

For a small poultry house, where about a dozen hens are intended, the position of the windows should be so as to allow the sun to shine in through the whole day. Two small windows may be used instead of one large, and they will give better results, as they can be more conveniently placed. To get the best results with windows, place them low, near the floor, and have one in the center in front and the other on the west end, which arrangement will allow the warmth from the sun until sunset.

SWAPPING EGGS.

The neighbor who goes to some enterprising friend and asks him to exchange eggs with him should bear in mind that the enterprising neighbor does not want the eggs from the scrub fowls at all, and if he obliges you he does so with a mental protest. It is just as reasonable to ask him to exchange a Jersey calf for a common native, or a Berkshire pig for a long-nose landpike. Eggs represent so much young stock, and have a value independent of their uses for culinary purposes.

A CHEAP FENCE FOR DUCKS.

A fence two feet high will confine the large ducks, such as Pekins or Rouens. To make a cheap, movable fence, cut laths in two pieces, which gives lengths of two feet. Nail the laths (top and bottom) to shingling strips (one by three inches), and nail a whole lath across the ends of the short lath, to bind them. The panels should be eight feet. It is only necessary to place them on the ground, their ends touching, and fasten them in position with a stake on each side, at the ends of the panels.

WHY POULTRY DON'T PAY.

Poultry raising is a business that seems to be the resort of all those who wish to venture outside of their regular avocations, under the delusive supposition that "anybody can raise chickens." Yet, strange to say, it is a business that is so complicated, and depends on so many contingencies, as to render it important that one should be well and fully experienced before making any investment in that direction.

I have often been amused at some of the inquiries made by parties desiring to enter the business of keeping poultry on a large scale. Such questions as "How long does it take eggs to hatch when under a hen?" "How much feed should he given daily?" "How many hens with each male?" etc., show plainly on their face that the inquirer is no more fitted to attempt the keeping of poultry in large numbers than he is to conduct the observations of the transit of venus, yet there are hundreds who believe that all one has to do is to buy a lot of chickens, put some feed in the troughs, and eggs are a natural result.

It is the above class of people who blindly undertake something of which they know nothing, who are the first to come forward to declare that poultry raising is a failure. Nothing is impossible at the present day, and the intelligent and experienced poultryman finds a profit in poultry, but the same success is not met with without some experience. No amateur can even conjecture what he must undertake in the fighting of disease, the management of the layers and the sitters, the selection of the breeds, and the proper protection to be given at different seasons, as well as the mode of feeding, and the quality of the food.

No man who never shod a horse would attempt to blacksmith business, or attempt to train and breed trotters, or manage a dairy without experience, but they will often write me to give them the entire details in a letter, enclosing the remunerating sum of two cent stamp therefor, no doubt expecting to be told all in a few lines and at short notice. They cannot get into the poultry business through the window in that way. They must go right in at the door of experience and do some hard work, as well as profit by what they learn, before they can pass along the hall way. The most experienced poultrymen have yet much to learn. There are to-day men working hard to discover many points in poultry keeping, who would give a thousand dollars for what the novice will ask for with a two cent stamp. Yet every week the attempt is being made to give the desired information. Right in these columns experienced and able poultrymen, such as Mr. C. S. Valentine and others, are giving the results of their labor for years, and gratis at that, as they would willingly help all who are seeking for more light.

There is another class of enthusiastic novices who write to know if they can make a living at poultry keeping." They might as well ask if they can "make a living at bridge building." A living can be made at bridge building, by one who knows all about it, but for one, I would soon be in the poor house if I had to depend on bridge building, as I would not know how to begin on a bridge. And one can make a living at the poultry business—if he knows how. No novice can do it, and I am frank to say so, but it will at least cost the novice less to begin and try to learn, at the poultry business, than in any other direction.

Experience, however, is open to all. It matters not whether one has had little or much experience, he will always find more to learn. Poultry raising is as much a business requiring experience as farming, brick laying, or engineering. At all trades one serves an apprenticeship, and gradually advances until he becomes a skilled workman, and even then many workmen will be found who are not up to the full requirements of the standard of the trade or profession chosen. But all must pass through that stage of apprenticeship, whether the time be short or long, and whether at civil engineering or poultry raising, for though there is a great difference between the two occupations, yet skill is required in both however; and the field is as wide for usefulness in the one as in the other.

Begin at the ground floor. Procure a few fowls, attend to them personally, watch them eat, examine their quarters, measure their food, try varieties of food, note the breeds, keep accounts of the profit and loss, and do not neglect a single detail. At the proper time add more hens to the flock, raise your own pullets, breed for what you want, and use the pure breeds, and gradually extend your operations until you find that as your flock has grown in numbers your knowledge of the "how to do it" has grown also. In a year or two you will know more than any one can express or explain on paper. You will have met with difficulties that compelled you to use your skill, or resort to some expediency to avoid loss. You will find that you have gradually and imperceptibly acquired knowledge and confidence, and you will then know whether to risk large sums of money in order to do a heavy business at keeping poultry or "let it severely alone."

It is not right to encourage a novice to risk his time and money at something he does not understand, and this article is intended not to encourage or discourage beginners, but to set them right a the start. There is money at poultry keeping, but it is in the man as much as in the fowls. A mistake may cause loss. Lice may drive one clear out of the field. The roup may come along like a cyclone and sweep everything away. But the man who begins at the bottom round of the ladder, observes all that transpires, tries to learn, and is not afraid of work, will sooner or later surely reach the top.—*Cor. Rural Home.*

FATTENING POULTRY.

All the chickens that the poultry-raiser can produce are designed, ultimately, for use as food. The products of the poultry-yard go to make some of the best dishes, on common occasions, and in time of festivity, and it is a matter of importance that this food should come to the market in as good order and condition as possible. In order to accomplish this object, the birds must be in a thriving, healthy state at the time of killing. A great majority of chicks are slaughtered at the stage of rapid growth. Those used for broilers are sold at a stipulated price per pair, as the market goes. These are the young cockerels, and culls from among the pullets. Their plumpness does not depend on their being kept in close quarters and crammed. If we crowd chickens, when from two to eight months old, in a close coop, keeping them in a dark place, depriving them of exercise, as is sometimes done with mature fowls, they will not get plump and in good condition, for the table, feed them ever so well. They pine and worry, get lean and unhealthy. Young and growing animals need plenty of light and exercise. Chickens, when less than six months old, must have liberty every day, run on a grass plot, have all they will eat and a good dry clean coop for the night, and for shelter during wet weather—all this whether they are to be slaughtered when young, or kept for layers and breeders. These are the proper instructions about fattening chickens during the first half year of their existence. To be sure they must have larger coops or apartments as their size increases. At this age we cannot get them to lay on fat like older fowls; but they may increase in the weight of flesh, tender and toothsome; and, with this good treatment, are always in the right condition to kill for family use, or for the market. Every one taken to the block will be in prime condition, and will leave room for the remainder.

Thus we see that our talk about the proper fattening of poultry must be confined to those birds that have come nearly or quite to maturity, or to those "old fowls," so-called, that have served their day, in laying eggs, and must step off the stage to make room for younger relatives. There is a demand for these, at a certain season of the year, and they are not to be despised, if well fattened. They have been laying, perhaps moulting. You see, there may be twenty on one perch at evening. It is desirable to select some of them for killing. Pass along and feel of each body, and the thighs; and lift each one seperately. It is an easy matter to detect which are low in flesh and to select a number from each perch suitable to be kept together and fed for weight. Those should be taken away and placed in a coop or apartment by themselves—all about the same condition of flesh. This coop should have a bottom of slats and be raised from the ground about three feet, so that the droppings may go through. Or the fowls may be placed in a small room, having the floor covered with clean straw. This should be removed frequently and fresh straw put in its place. Fowls kept in a coop or other place, to fatten, should not be strangers to each other, and precaution should be taken to avoid fighting, or any disturbance. It is important that they be quiet, clean and comfortable.

Then comes the very necessary item of food. All the work of feeding must be done within the space of about three weeks. The quicker the requisite amount of weight is obtained, the better the quality of the poultry for the table. In this country, corn meal is the cheapest and best food for this purpose. This material, fine ground, and wet partly or wholly with milk, is what they will devour most greedily. If the fowls are healthy, they will "fill up" without any trouble. Yet it is not advisable to feed them to repletion at first, lest to sudden a change cause derangement of digestion. It is better to feed a smaller quantity and oftener—say four times a day. The gizzard will work promptly, for such grinding is easy. The feed should be placed in a trough, arranged so that their heads may come freely to it, and not their feet. There should be sand and gravel supplied, also water, though there is not much demand for the latter while wet food is given.

In regard to the surroundings, it may be said that it is preferable to have the sexes seperate. A lot of hens will fatten better to be out of sight or hearing of any other fowls, male or female. If properly isolated, it is not really necessary that they be kept in a dark place, to produce the best results. Continual darkness or twilight is not essential to quick fattening; certainly not for healthy thrift. A darkened coop has been recommended, for the purpose of quiet. But getting fat is a natural process. It is simply storing away in the tissues that which is not necessary for immediate use, while the body is in a state of inactivity. At the end of three weeks the tissues may be full and the birds tender and juicy, just right to make food for man.

Thousands of our readers, farmers and others, never have occasion to do this thing on a very large scale. They do not care about the French methods of cramming, or forcing food down the gullets of fowls by machinery, but desire to learn the best method and the quickest of rendering lean fowls fat and fleshy. For the benefit of such persons this article is written. It may be easy to go out and kill a "good fat hen" from the common flock; one that has laid on fat because she "wouldn't lay," but these lean ones, that have been separated and quickly fattened, are more tender, juicy and better for the table, and they dress better for the market.—*Poultry Chum*

VENTILATING POULTRY HOUSES IN WINTER.

It is not necessary that poultry houses should be expensive. More failures have resulted from the attempt to make poultry houses have all the "modern conveniences" than from any other source. In a cold climate, where snow covers the ground a portion of the time, and where the cold wind whistles into every crack and crevice, the great difficulty is to keep the hens warm and comfortable without the aid of stoves, which may be expensive. Yet, in the face of the fact that it requires very close walls to keep out the cold, a majority of those who build poultry houses put in a ventilator, which is left open all the season, to assist in freezing the fowls on the roosts at night.

Ventilators to poultry houses have done more damage to poultry in winter than anything else. If the air of the poultry house in winter is foul, some excuse may be made for the ventilator, but the severe cold seals up all sources of odor, and in a short time turns all liquids to solids. The poultry house can be amply purified and ventilated by leaving the doors and window open during the day and using dry dirt on roost, board and floor as an absorbent, but the ventilator at the top of the poultry house should never be left open after cold weather sets in.

It is well known that fowls object to being exposed to winds, or cold draughts of air, as the combs are easily affected by cold draughts, and they are at all times liable to colds which lead to roup (or distemper, as some style it.) No ventilator can be arranged that will prevent the draught on the fowls, for the reason that ventilation is controlled by the direction of the wind to a certain extent. A draught may come in at the bottom of the house and pass out at the top, and in so doing all the warmth and heat of the house goes with it. Next, the wind may, at some time in the night, change direction, and the cold air will come in at the ventilator in frequent gusts, right down on the fowls, and the result will be swelled heads, eyes watery, and, in a few days, roup in its worst form.

Let your object in winter be to secure warmth first. Ventilation will take care of itself, and you will have more difficulty keeping the cold air out than to let it in. We have never heard of fowls dying for lack of fresh air in the winter season, but we have seen hundreds die from having cold draughts of air blow over them at night, under the mistaken supposition that a ventilator must be attached to the poultry house. We call attention to this now because a number of our readers may be building and arranging for winter, and our advice is to let all convenicuces that stand in the way of warmth be discarded.

THIS AND THAT.

Having read frequent articles on the necessity of moisture in hatching chickens, and being of an inquisitive turn of mind, I resolved to try a few experiments. Accordingly during the past dry spell I set three hens in an outbuilding attached to my poultry houses. One of the nests I arranged so that moisture could be supplied, the other two nests consisted of nothing but plain boxes with straw in them.

My mode of supplying moisture was as follows: I made a box about fifteen inches square, into this I put a lattice-work false bottom about two and one-half inches from the real bottom. Between the false and real bottoms I filled in sand to about two inches of depth. This I kept moist by boring holes in the sides of the box and inserting half-inch gas pipes, through which I poured warm water as soon as I found the sand becoming dry. My idea for inserting the false bottom was to keep the straw from the sand and thus avoid any chance of it becoming wet and cold and thereby chilling the eggs. The result of my experiment, while to many may not be convincing, has confirmed me in my belief that the hen does not supply sufficient moisture to the eggs, especially in dry weather, and I shall hereafter use only nests made like the one described. Under each hen was placed fifteen eggs. The eggs were all gathered from my own yards and not one of them was more than two days old. Of the thirty put under the two hens but twenty-eight were fertile, while of the fifteen put under the other hen but thirteen were fertile. The number of live chickens gotten from the hens that were set in ordinary boxes was but eighteen, the other ten eggs having live chickens in them but which had evidently died from being unable to get out of the shell. The hen that was supplied with moisture brought out every chicken, the shells, upon examination, being as soft and brittle as could be, while those under the hens without moisture were hard and tough. I propose giving this experiment another trial and on a larger scale next spring, but feel confident that it is the best kind of a nest to use, especially when the weather is as dry as it has been during the month of August.

The show season is upon us again, and before *The Journal* reaches its readers again three or four shows will be over and several more in progress. Now, let us bury all differences and come out with strong entries, score card or comparison, for certainly without the shows the fancy will soon be a fit subject for burial. I hope you, Mr Editor, will do all you can to wake up an interest in a show for Philadelphia. I was very much interested in Mr. Reynaud's remarks, and agree entirely in what he said. Of course, it is not very encouraging to face disaster every time, but we must remember the old saw—"A faint heart never won a fair lady nor a fat duck." Boom it up, Mr. Editor, and get all your readers to give their ideas about the matter. It can certainly be made a go if there is only enough interest taken. I am glad to see the county fairs allowing more space and money to the poultry department. That is as it should be, and the breeder who does not do all in his power to encourage the manager deserves all he gets. Of course, in many cases the prize money is not large, but, I ask, does it not pay to get small prizes in hard cash much better than larger ones in the shape of promises? Besides, look at the market that is continually being opened up.—*C. Skelton, in Fanciers' Journal.*

POINTS OF LIGHT BRAHMAS.

The Light Brahmas have been bred so uniformly that the majority of persons cannot tell a pure-bred one from a crossed bird. Every bird that is white and has feathered legs is supposed to be a Light Brahmas, but it is really difficult to breed them up fully to standard requirements. They should have yellow legs, with profuse feathering down the sides of the shanks, extending to the ends of the outer toes, with the middle toe well feathered also, but not the inner ones. The beak is yellow with a dark stripe down the upper mandible, and, when they are chicks, the darker this stripe, the darker will be the hackle and tail. In the cock the hackle should be white on the upper part, the remainder having a black stripe running parallel with the white, the black being in the centre of the white to the end. The hen's hackle is not so full, and the black of the hackle is distinctly separated from the white of the back. The wings are small, the tail black, and the thighs heavily covered with fluff. The Brahmas have pea-combs, or a larger comb with two smaller ones, the whole making a very small comb, resembling an open pod filled with peas. The cock should weigh twelve pounds and the hen ten. The cockerels weigh ten pounds and the pullets eight. The breast should be full, the back rather flat, and to distinguish it in shape from the Cochins, it should not be too compact. They lay well, as their small combs protect them against frosted combs in winter, while their heavy feathering renders them hardy and well adapted to cold climates.

PLUMS IN THE CHICKEN YARD.

A writer in *Indiana Farmer* says: Theories vanish by the side of facts in every avocation. I have at the present writing three Robinson plum trees loaded with ripening fruit, and two others with not a plum left. The five trees were set on the same kind of ground seven years ago and have had the same culture. The same results have been derived for the past three years, the three trees bearing a full crop of sound plums, and the two a crop of wormy fruit worthless. The three fruiting trees are in the chicken yard; the others outside. The ground in said yard is not plowed, but early in the spring is swept and kept hard and smooth. Under these trees I scatter bran and screenings, and "biddy" does the work of eating the pestiferous insects. While looking for the little seeds and spects of bran she garnishes her food with the spicy curculio. I know this to be true, for I have the evidence. Now, for seven varieties of plums I must speak a good word for the Robinson. It always produces. I have Wild Goose, Marianna, English Blue, Lombard, Prunus Simoni, etc., but the Robinson gives me only crop in this year of '93. I have been out with saw and lumber this morning and propped up the limbs that are hanging almost to the ground with tempting fruit. Even the chicken yard is not a sure defence with other varieties this year, but the Robinson, where plenty of fowls are enclosed and fed, will not disappoint the planter.

A POINT ON FRESH EGGS.

It a wise farmer who can swear that every egg in his basket is fresh if he collects them here and there, in horse trough, up the barn loft, or wherever the hen may elect to deposit them; hence too much care in the endeavor to be sure that the eggs are fresh cannot be observed. When the hens have a yard and poultry house, with suitable nests, and the eggs are taken from the nest daily, the possibilities of the eggs being stale is very much lessened. No nest eggs should be used at all, and especially stale eggs, as they will surely get in among the fresh ones sooner or later. The point, however, is this. The merchant always examines the eggs he receives, "candles" them, and if a single bad one is found the price on the whole is reduced, owing to the suspicion occasioned by that one bad egg. Always be certain that your eggs are strictly fresh.

EGGS FOR SELECT CUSTOMERS.

You will perhaps smile when you read this title, and say to yourselves, "there is nothing in it." Many are so much accustomed to thinking that an egg is an egg, to sell, whether it was fresh laid or was found after having been sat upon for a week or more, just so it does not rattle. They think that all of these doubtful eggs that they can get off upon their grocer is just that much made. I do not say that all are that way for some have found a better way, but how natural it is to stick to the old way, and think it is the only way (if we think at all). Who has to lose these bad eggs? The consumer, you say? I say not; it is the producer. He loses by the low price at which he sells his eggs. But how can he command any better prices? Very easily. By getting his eggs up in better shape, fresh, clean and attractive.

To make myself better understood I will describe the methods of a friend who has worked up from a poor orphan boy to a well-to-do man just on eggs. But I want to say right here that you must not all expect to get rich selling eggs within the next twelve months. We can't all do these things on a large scale, but we can all do it in a smaller way and make it profitable.

In the first place, he keeps nothing but layers and all of one variety, that the eggs may be of a uniform size and color, as near as possible. He now keeps about 600 hens and gets on an average thirty dozen per day which he has a market for at twenty-five cents per dozen the year through. He has his own crates and ships one crate a day to the city market, about thirty miles distant, as regular as clock-work.

But some one says, "how did he get such a contract?" That is just the most interesting part of it, and the very point we want to make. He established his trade by going to a first-class grocer and telling him that he would furnish him eggs at the market price for two months, and guarantee them all strictly fresh and would agree to duplicate free all that were reported otherwise. It was accepted and he proceeded to do his part by selecting and testing the eggs himself, to be sure not to get any that were not "strictly fresh," but this was a small matter, as the eggs were all gathered each day and marketed the following day. He had a rubber stamp that he used on each and every egg, giving the date it was laid, the name of the producer and the words "guaranteed fresh."

The result was that by the time his two months were up he had a great array of customers through his grocer who thought they could not do without his eggs and they did not propose to do without them, even at an increased price over the regular market price.

This experiment was carried on during July and August, the very worst time in the world on eggs and the best to establish such a business. And he had no trouble to arrange for supplying the grocer with all he could produce, and as he increased his facilities for getting more eggs he still kept his reputation up to the established mark, knowing that if the quality of his eggs was lowered his business would be injured.

Occasionally he would buy eggs of a neighbor but they must all be assorted the second time to insure being right up to the mark, and each egg besides bearing his name had the initials of his neighbor, and if any proved not good the neighbor had to give him two for one. The third time a bad one appeared in his lot in a given time he marked him from his list and would purchase no more eggs from him.

But my friend's object was to produce his own eggs. This he did largely, and increased his flock from the beginning of fifty hens to 600. He raised the greater part of his layers, marketing the male birds as broilers, thus getting them out of his way as soon as possible, that he may the better care for his pullets and get them in laying shape as soon as possible. As fast as the hens get old they are sold and others put in to fill their places. He keeps nothing over three years old.

You can not all do just as this man has done. The opportunities are not the same, markets, etc., but almost any one within reach of a good thrifty town can certainly work up the same class of customers on a small scale to whom he can sell good guaranteed eggs at an advance of at least five cents per dozen and that will pay you well for all the extra care it will make.

The main qualification in this line is care. You well know that this is an age in which the very *best* of everything is demanded, and at an advance in price.—*Cor. Ohio Farmer.*

HOW MANY FOWLS SHALL I KEEP?

The poultry business, like any other, can be conducted on a large or small scale, just as the fancier may determine. But the question is, how many fowls can be kept to the best advantage, or the most profitably?

We have heard people argue that if fifty head would pay a certain amount that one hundred head would pay double, two hundred, quadruple, etc., etc. Then if fifty head would pay fifty dollars, or one dollar each, why then a thousand would bring in a profit of a thousand dollars; and a million head would give the owner an income of a cool million. Now, of course, that is sheer folly, as any person ought to know, and yet we have known breeders to go into business with about that idea.

For instance, we knew a gentleman, many years ago, who usually wintered about thirty fowls. He kept a strict account of every ounce of food that he gave them, and also an exact account of every egg gathered, and its value, and of every chicken raised, and its value. We do not now remember the exact figures, but if our memory serves us, he demonstrated to a nicety that his fowls cleared about one dollar and twenty cents each, per year. Therefore his flock paid him a net profit of thirty-six dollars.

After getting this all figured out he went further, and showed to a demonstration that fifteen hundred fowls would pay a net profit of eighteen hundred dollars. Indeed, he argued that they would pay more, in proportion to numbers, if kept in large lots than if kept in small; on the same theory that goods can be sold cheaper at wholesale than at retail.

So our friend concluded to go into the poultry business on a large scale, and did so. We do not now remember exactly how he came out. But we do not that he lost over three hundred dollars in one year, and then quit in disgust.

Probably—assuredly—had this gentleman worked his way up gradually, he might have kept nine hundred fowls, and made good money on them. But he was not content to do that, but wanted to jump into an immense business at once. It didn't do, and it never will do. But even let a person take these same nine hundred fowls, that knows all about them, and knows just how to treat and handle them—can he make thirty dollars to the one dollar that a person can make with thirty? No, he cannot, and here is the main reason why; a flock of thirty fowls will do well without any special attendant. That is, the owner can, and usually does, attend to them in person. But when the flock runs up to nine hundred, you will find you must have one or two men as assistants, at say seventy-five dollars per month. But for the purpose of argument, we will say this help only costs thirty dollars per month. That is three

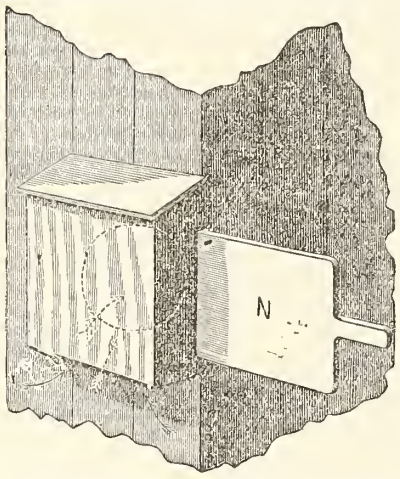


FIG 2.—PLAN OF VENTILATOR FOR POULTRY HOUSE.—(See Fig. 1, on First Page.)

hundred and sixty dollars per year, or just one-third of your entire profits.

Again, your thirty fowls got all the refuse from the larder, in the way of dry bread, bits of meat, etc., etc. This saved quite an amount in your feed bill for thirty fowls—fully one-third. But it will amount to nothing with nine hundred.

In fact, it is very plain to us why it is that a very large flock will not pay the same net amount per head as a small one.

Now the question, as asked at the head of this article, comes up, but we cannot answer it. No one can. It all depends upon circumstances and surroundings, and the owner. But, as a rule, one hundred fowls is as many as any person should attempt to winter; unless such person is well up in the business, and has many needed appliances, including house room, for the accommodation of a larger number.—*Mich. Poultry Breeder.*

MY CURE FOR ROUP.

Fowls will be assailed with *roup*, in some of its numerous and annoying phases, under the best of treatment. I am not much troubled with this disease (or any other) in my fowl yards, for the reason that I adopt preventive measures in caring for my stock, which is better than trying to cure this ugly poultry evil.

Take care of your birds, then. Keep them free from lice always. Give them good, sound grain, clean food, and pure water regularly, upon system, and have handy the German Roup Pills (to be had at the office of The Poultry World, Hartford, Conn.), which have deservedly acquired a world-wide reputation, through their extraordinary efficacy, adaptedness, operative and restorative qualities, where they are judiciously administered to ordinary sick fowls. The combination of health-giving ingredients embodied in the peculiar prescription from which this universally approved and promptly effective medicine is made, is really "a wonderful discovery;" and these pills may be used at any time, when a fowl is ailing, to advantage. I have tried them thoroughly, and know their value.

When a fowl or chicken first shows the ordinary symptons of roup, remove it directly from among the well birds and treat it vigorously, if you would save or restore it without expending more time upon it than it is ordinarily worth. Delay in feeding a sick fowl is often the cause of its death.

If the eyes are swollen or inflamed, wash the head and nostrils thoroughly three times a day with a solution of common chlorate of potash, alternating this with a bathing of the inflamed parts with whisky, or half-diluted alcohol. Give the bird a tablespoonful of whisky (half water) at night and morning. Then three German Roup Pills at noon, for three days. Usually this will cure the sick ones when taken in season.

If diarrhœa attacks them (which is another phase of roup) wash the head and mouth, as above recommended, and give a teaspoonful of common chalk mixture in a tablespoonful of boiled milk, morning and night, with the roup pills at noon. Put a pinch of cayenne (red) pepper into their drink, meanwhile, and allow them no other drink while ailing. Feed on boiled rice and wheat meal—keep their diet low but steady—and you will find your birds improving, seven times in ten, at once. But all this must be done promptly, as soon as you discover them moping about or out of condition.

The great difficulty in treating this common fowl ailment, to do any good, is found in the fact that most persons neglect it at first, and permit it to run too long before they take their fowls in hand. The symptoms of roup show themselves clearly in the condition of the sick fowl; in their snipping, inflamed eyes, the swelled head, the watery nostril, the loss of appetite, the discoloring of comb, the sulking about the house, etc. And when any of these indications are seen, look to your diseased bird immediately, and this trouble may be easily removed as above directed.—*Fowl Raiser's Handbook—Burnham.*

FUMIGATING A POULTRY HOUSE.

Turn out the fowls some cool or damp day, and close all the cracks in the house except the door. Then take a kettle of live coals and place on the ground in the center, but if there is a wood floor, lay a flat stone in, on which to set the kettle. Throw a half-pound or a pound of sulphur upon the coals and shut the door, and leave the house closed for a few hours, and we will venture to say no more lice or mites will be found in it for a few weeks thereafter. If the house is not tight enough to admit of a thorough fumigation in the manner described, then clean as well as you can, and then mix whitewash with fresh lime, mixing a liberal quantity of sulphur, after which throw sulphur into all the cracks, and apply kerosene oil to all the roosts. The house should be well aired before the fowls are admitted, and well ventilated at night. We have never known the "sulphur cure" to fail if properly applied.—*Poultry World.*

MISTAKES.

Things to Be Avoided—Practical Suggestions Worth Considering.

To trust to the hired man to care for and feed the flock, when it should be known owner's interest only insures proper attention.

To lay mishaps or poor success to "bad luck," when there is no such thing as luck in poultry-raising unless it is p-luck.

Not to carefully cull over the flocks early in the fall and sell all the surplus young roosters and the hens that are three years old.

To keep too large a flock for the accommodations afforded and thereby endanger all to the ill effect of undue crowding.

To conclude cleaning the henhouses out once a week is sufficient. This method compels the poultry to breathe the atmosphere ordorous with their droppings for six days in the week.

To wait for the hens to become lousy before using any means to keep down vermin, when it is known that the keeping of the flock free from vermin is the price of almost constant vigilence.

To doctor fowls that are badly affected with roup, canker or any contagious diseases. Better kill at once rather than subject a fine flock to such diseases.

Not to study the causes that bring many ailments to the flock and adopt preventive methods so to avoid them.

To feed corn as a constant diet for weeks and then wonder why the hens lose their appetite, stop laying or lay soft-shelled eggs.

Not to know that the hens that have good, comfortable winter quarters do not require as much food as those poorly housed and will probably yield some eggs during the winter.

Not to know that "poultry powders" are not required for flocks that are fed and cared for properly.

Not to have a good supply of leaves, road dust, crushed oyster shells and scratching material for sheds, for winter use.

Not to be as regular and have a stated time to feed the flock as you do in taking your own meals.

Not to understand the importance and value there is in having the poultry tame, and thereby realize how much more profitable they are than when wild.

To have high roosts, which cause cases of bumble foot, accidents, and places where mites become snugly ensconsed where they cannot be easily dislodged. Have the roosts low and all on one level.—*Baltimo Sun.*

COMPOSITION OF CORN.

The following average analyses of several samples of each of the varieties of corn named were made by Peter Collier, director of the New York experiment station:

Constituents.	S'g'r	Y'l'w	Wh'te	Mix'd
Fats or oils	9.14	5.91	6.14	6.35
Sugar	6.40	2.38	2.38	2.50
Soluble albuminoids	6.42	5.35	5.48	5.61
Insoluble do.	6.74	6.53	5.62	7.47
Sol'ble starch & gum	24.48	2.09	2.53	2.72
Fibre	2.08	1.38	1.76	1.57
Ash	2.08	1.69	1.64	1.78
Starch	42.06	74.67	74.45	72.09
	100.00	100.00	100.00	100.00

Dr. Collier says: "From these analyses, it will be seen that, so far from containing more, the yellow corns on the average contained the least fat of all. It will also be observed that the so-called sweet corns contained on an average nearly three times as much sugar as the other corns; but there was present about twenty-five per cent. of a substance called soluble starch, which gives the peculiar physical and physiological properties to these corns, but which substance does not appear to have received the attention which it merits.

THE FARM FLOCK.

Poultry raising is profitable if it is sensibly and methodically pursued. As a branch of farming that requires so little hard work, carries with it so much enjoyment and takes up so little space about a farm, we know of nothing profitable that could take its place. To run a farm, large or small, without a well arranged chicken department would seem to lack a feature that would be noticed by nearly every one, and cut off a steady supply of ready money for household purposes that would be soon felt and regretted. Poultry is no doubt profitable and to many a pleasant pastime rather than a labor.

Fowls are as profitable as any other stock a farmer can keep, and more so, provided he pays to them the same attention, and is as much interested in them as in his other stock. In a majority of cases fowls are merely kept on the farm because they cannot well be dispensed with, and not because the farmer wishes to reap any profit therefrom. As a general thing you will find that poultry on farms belong to no special breed, but are a mixed up mess. Unless the farmer keeps birds that come of good stock and feeds them regularly he cannot expect any profits.

RED SPIDER LICE.

Red spider lice are the most troublesome of any of the kinds of lice that infest poultry. When they have once got possession of the poultry quarters or have infested the feathers and skin of the poultry the only remedy is to fumigate thoroughly with burning brimstone. No living thing can withstand that. The whole interior of the poultry buildings should be thorougly whitewashed. An easy method to avoid this pest is this: Procure for perches planed spruce joists, 2 by 3 in size, and as long as required. Cover them with hot coal tar, and you will have no lice for at least one year. I have perches that were so painted three years ago; they have been in constant use ever since, and there has been neither tar nor lice on them since. Every one knows that this tar is an odoriferous compound. It is excessively obnoxious to the lice. They will thrive and multiply daily in all manner of filth and offensive matter, but coal tar is beyond them. It costs one and one-half cents per gallon. Every breeder of fowls should have a barrel of it on hand. This tar, before it is applied, should be boiled and then a thin coat applied. It will then harden when it cools and will not tarnish the fowl.—*James Rankin, in the Homestead.*

CLOVER AS FOOD FOR FOWLS.

Clover is not only more suitable as summer food for poultry, owing to its bulky nature, compared with corn, but it is also more nutritious, as it contains a greater quantity of the substance required for the production of eggs. The lime for the shells is procured when in a soluble form in the food, as it must pass through all the stages and processes of digestion, and the more soluble the mineral elements the easier and more completely they serve the purposes of the hens. Clover hay contains over thirty times more lime than does corn or wheat, and the green clover, though containing more water, is comparatively as rich in lime as the hay. Clover is also a nitrogenous food and supplies the elements necessary for the albumen of the egg. When the hens have access to clover they will eat a large quantity during the day, and if insects are numerous their wants will be fully supplied. If it is desired to allow grain to the flock it should be fed sparingly and only once a day. Do not waste food by feeding it in summer, as the hens are capable of supplying themselves.

POULTRY AT THE WORLDS' FAIR.

(*Continued from Page* 137.)

confirm what has been mentioned of the past.

The altering of the Standard required quite a length of time, the results not being known until the proceedings can be published.

MATTERS IN GENERAL.

Mrs. W. P. Wheeler, wife of Mr. W. P. Wheeler, of the N. Y. Agricultural Experiment Station, Geneva, has been quietly importing Buff Leghorns. She caught the "boys" asleep at the Fair, and walked off with the honors. Her birds were probably equal to any that have come over the ocean. Mrs. W. is also thoroughly informed on the breed, and knows how to mate for the best results. She made hosts of friends.

J. H. Thompson, Patterson, N. Y., ought to have won more prizes. His Plymouth Rocks were entitled to some of the honors that were dealt out on the *family basis*, but he does not understand a few things about "my friend the judge." When a square judge like Brown, who could not be intimidated, got on the work, Thompson won the breeding pen prize, and other breeders were also compelled to see good birds sacrificed. At New York he once had to submit to a loss of honors because the judge gave the award to a bird that seemed like a cross between a Barred and a White Plymouth Rock.

But every man who feared to speak or lose his life deserved to be punished.

F. M. Munger, DeKalb, Ill., should have won some of the prizes, but Munger knows why he did not.

A. and E. Tarbox, Yorkville, Ill., were the leaders on Silver Wyandottes.

Ira C. Keller, Prospect, Ohio, was the principal winner on Golden Wyandottes, and E. O. Thiem, Vail, Iowa, on Buffs.

The White Wonder fowls were creditably displayed, W. N. Freneb, New Haven, Vt., and F. E. Menamy, Bethany, Ill., being the exhibitors.

In Light Brahmas J. B. Foot, Norwood Park, Ill., and Alfred Doyle, Morgan Park, were winners, both leading in quality.

J. F. Knox, Buffalo, N. Y., won honors on Black Lackshans, as did J. E. Rundell, Lamar, Mo.

B. T. Pace, Salem, Indiana, and C. H. Andrews, Buckley, Ill., won some of the honors on White Cochins.

J. A. Bailey, Denver, Colo., sent his birds a long distance but he captured a breeding pen prize. This was one of the best pens in the show, and Mr. Bailey deserves credit. His birds were Single-comb Brown Leghorns, although some of the other awards in Brown Leghorns were not exactly as they should have been.

Knapp Bros., Fabius, N. Y., as usual won the bulk of the prizes on White Leghorns, and that, too, with good judging. Cock, hen, cockerel, and breeding pen went to them, and they also won other prizes.

B. R. Knapp, Cortland, N. Y., made almost a clean sweep on Rosecomb White Leghorns.

In Buff Leghorns, C. W. Bishop, Verona, N. Y., Concord Poultry Club, Concord, Mich., White & Dennison, Marilla, N. Y., and F. A. Stewart, competed with Mr. Wheeler, and made very creditable displays.

In Black Minoreas F. P. Grimes, Paw Paw, Mich., and Willard Knapp, Fabius, N. Y., showed excellent specimens, as did some others.

Black Spanish were good, John Bennett, Sunman, Indiana, showing some fine birds, and which were well proportioned.

Daniel Pinckney, South Onondago, N Y., the veteran breeder of Houdans, won more than his share. In fact, nearly all breeders of Houdans get their stock from him.

D. A. Mount, Jamesburg, N. J., was one of the winners on White Holland turkeys.

Theodore Sternberg, Ellsworth, Kan., was present, and assisted in adding to the "attractions" of the show. He was the orator of the A. P. A., and has a host of friends.

H. A. Bridge, Columbus, Ohio, is as particular as an old maid in judging, and when he makes an award it is usually correct, but he must "rise and explain" his decision as acting president of the A. P. A., by which he permitted twenty-seven men "off the street" to come in and vote. We believe he meant well, but it turned the A. P. A. over to men who were illegally voted for.

When I. K. Felch sent in his resignation it should have been accepted. If there is no law to accept a resignation then there is no law to expel a member.

Geo. E. Peer, Dr. T. W. Tuggle, and E. F. Valle were the judges of pigeons.

Among the exhibits in the poultry department were "ear tags" and "bull rings," also "model silo," "chemical dehorner," "sheep dips," etc., which were in the incubator room. Rabbits, ferrets, guinea pigs, squirrels, and other such *poultry*, were of course shown at the "Worlds Fair *Poultry* Show.

The judges did not score at the rate of *one a minute*. Less than six birds an hour was the average. And yet the prizes were not given, in many cases, to the best birds.

In several instances attempts were made to "bulldoze" judges who were independent. One man followed them up and endeavored to dictate to them, in some instances carrying a judge in his pocket.

The reporter for the *Fanciers' Journal* thus describes the performance: "There were thirteen barns devoted to poultry and pigeons. One row of coops occupied each side of the broad isle just in front of the cow stalls, so if a person wished to view all he had to walk about two miles, and on a cloudy day it was impossible to view the fowls with any satisfaction. It was a common sight to see a judge with a bird under his arm making for a door in order to properly judge the specimen. The greatest handicap, however, was the score card. It was simply ridiculous to attempt to judge by scoring. I heard old score card advocates lamenting over this fact. I don't wonder that so many judges advocate score card judging, as it is all day's work and the bills amount to quite considerable. In my opinion, one-half of the judges advocate the score card simply for the money that is in it. Let us see. There were twenty-one judges and about 3,500 birds (altogether the official catalogue gives 3,700). If each judge judged an equal number of birds it would give 166 birds to each judge. The judging commenced Monday, October 16th, and ended Wednesday, October 25th, or nine days. If each judge passed on 166 birds in nine days he must have judged at the rate of eighteen birds per day. Further comment is unnecessary. Although the pace was slow, yet in some classes the kicks were numerous and vigorous. The scores ran about as high as at a mid winter show, which was simply absurd. I have in mind now a White Wyandotte cock that scored 89½ points that was so badly moulting as to be classed by the casual observer as a barnyard fowl. His neck was all moulted out, and in many places merely black pins showing. The tail was two-thirds out, as was the feathers on many parts of the body. Oh, ye gods! what will be the score of that bird when in full feather? Other old birds were scored from ninety to ninety-four or ninety-five. Another bird was beaten 1-16 of a point, and so on. Is it necessary to say more? The blue ribbon actually got on the right coops in a majority of instances, but it was rather amusing to view the ribbons on Pekin ducks. A certain breeder exhibited a young pair and an old pair. The old pair deserved first, but as the pair that received first were cleaner, owing to the fact that they had a double coop and were taken out of the show for over a day to clean up before being passed upon, they, of course, won. Strange to say, this deserving first pair did not receive any ribbon, but the young and smaller pair alongside of them received a ribbon, although there was no class provided for young birds.

The Eureka, Reliable, Williams, Buckeye, and Simplicity incubators were shown in full operation. To show the difficulties experienced by the incubator men, we give the words of Mr. J. L. Campbell, maker of the Eureka incubator, West Elizabeth, Pa., who says: "The incubator building was ready for the incubators July 1st. We had managed to secure, by very hard work, space of 10x40 feet, which we found, on arrival, to be the largest space awarded to any single exhibitor. This space we filled as full as it would hold with incubators and one large brooder at one end with a small yard of 5x12 feet. In this small space we kept and raised over 100 chicks. We gave some away and sold some, and had ninety left when the Fair closed. The chicks were nice and healthy, although we were on the north side of the building, where the chicks never got a particle of sunlight and they were never outside of this small pen from the time they were placed in the brooder until the close of the Fair. Out of this lot we lost but three chicks, and two of these were accidentally killed. This was the most severe test to which I ever placed either chicks or brooder and both came out with colors flying. To tell the gospel truth I was afraid, when I started, that I could not succeed, on account of the very small yard and absence of sunlight, but the only thing which seemed lacking in the chicks was color in the combs. We hatched and sold a very large number of chicks, and many of those to whom we sold the first hatches came back and told us that they had raised the chicks without trouble. One or two parties who had bought a dozen came back nearly two months afterwards, and said they had raised eight out of twelve, and said that I ought to stand at least half the loss. I was so greatly amused at this that I was perfectly willing to give them the chicks." The Eureka was given awards on all the entries made, both medals and diplomas.

The Reliable Incubator and Brooder Co., Quincy, Ill., also gained high honors, receiving a diploma and medal on incubator and brooder combined, and medal on hot water brooder. It attracted marked attention, and the incubator shown was handsome, beautifully finished, and well made. The Reliable is working its way to the front, and has a bright future before it.

The Simplicity Incubator, made by Van Cullen & Co., Delaware City, Del., is too well known to be described, as it has already been illustrated by us in detail. It also received medals and diplomas, and its work was very good. We are, in fact, surprised that an incubator worked at all in such quarters as were given them.

The Improved Monitor, made by A. F. Williams, Bristol, Conn., the Buckeye, made by the Buckeye Incubator Co., Springfield, Ohio, and others were also on exhibition.

With twenty-five illegal votes in thirty-two, the election of President of the A. P. A. would make even Maynard blush. What a disgrace to the A. P. A.

The Baltimore *Sun* says that the judges at Chicago had a hard time. The impediment to rapid and good work was unnecessary red-tape inflictions. Each judge was required to make a duplicate score-card for each specimen; to fill in a dozen or so spaces at the head of each score-card; to make out a report of the six prize birds on a blank, giving name of breed, owner's name and address, band number on leg of specimen, the score and department number. All this had to be duplicated in a book. The judges in some cases had a serious time in getting their bookkeeping and clerical work in the proper shape. The display was scattered among ten large barns, running nearly as many different ways, and the poultry judges had a continuous walking match to locate the specimens assigned them to judge.

Bridge disqualified a bird because the beak was tampered with. He was right, and did his duty. But what about the first prize Plymouth Rock cock that had been *trimmed*. Pierce must explain.

Our Canadian friends must not suppose that they were under as many obligations to some parties as they were made to believe.

E. E. Page, Cleveland, Ohio (now of Knoxville, Tenn.), won two firsts, two seconds, and one third on several varieties.

J. D. Wilson, Worcester, N. Y., made a *clean sweep* on Buff Plymouth Rocks. He received a great many compliments on them, and they were probably the best ever shown. Their color was a clear buff. The prize pullet was a rich orange buff, and all of them were full of white. Mr. Wilson has the lead on this breed, and will no doubt hold it, especially if he will breed his birds according to his *experience*, and not be guided by so-called judges who never bred Buffs, but who often attempt to point out defects by way of conveying the impression that they know something.

According to the Baltimore *Sun* a new and decidedly green Columbian guard at the World's Fair, who was on night duty, promptly turned off the coal-oil lights that were furnishing heat to the incubators on the first approach of dawn. He didn't see, so he said, why showcases of eggs should be specially illuminated. The owners of the incubators took on worse than sitting hens possibly could.

If Mr. I. K. Felch had attended the meeting at Chicago he would have been elected President, as Mr. Forsyth would no doubt have retired in his favor.

The committee to nominate officers will receive attention after awhile. *Revenge* on Scudder and others was the order of the day. It will be given a ventilation on how it was done.

Bone mills and cutters were shown, a Mann bone cutter being in the incubator room, while both Messrs Webster and Hannum were present to show their bone cutter.

The *stuffed* birds were placed in one of the great palace buildings, adorned and made to look like life, but the *live* bird was relegated alongside of cattle and sheep.

THE ATLANTA SHOW.

The Southern Poultry and Pigeon Association has been reorganized as a stock company with sufficient funds to guarantee the success in every particular of its show to be held in Atlanta, Ga., January 9th to 13th, 1894. The officers of this association are all more or less experienced in the show business, and purpose to run this show on business principles, so as to guarantee its successful management, insomuch that all exhibitors receive equal justice.

That no fowl will be allowed to compete for premiums unless entered on secretaries' book five days prior to opening day of show.

That fowls be shown in coops of the best design and patent.

That the cooping, feeding and management of fowls be in the charge of a man of practical experience.

That judges of national reputation be employed.

That judging be completed and premiums announced on second day of show.

That all birds entered for competition be scored.

That premiums be paid promptly on last day (13th) of show.

That the attendance of all exhibitors be made agreeable and profitable.

The managers desire the co-operation of the fraternity in our efforts to carry out the above programme. The officers are: Thos. W. Tuggle, President; J. Alwyn Ball, Vice President; R. O. Campbell, Treasurer; Geo. M. Downs and H. A. Kuhns, Secretaries; Executive Committee, B. T. Smith, River View, Ala.; Dr. T. W. Tuggle, Columbus, Ga.; Geo. M Downs, Atlanta, Ga.; Loring Brown, Bolingbroke, Ga; Alfred Bertling, Athens, Ga.; P. F. Hager, Nashville, Tenn.; R. O. Campbell, Atlanta, Ga.; Wm. Wilson, Atlanta, Ga.; H A. Kuhns, Atlanta, Ga.

Address all communications to the secretaries, Geo. M. Downs and H. A. Kuhns, Box 400, Atlanta, Ga.

Maryland Poultry Farm, Arbutus, Md. S. C. W. Leghorn Cockerels, March hatch, grand birds.

FOR SALE.—3 Prairie State Incubators. Box 38, CHESHIRE, CONN.

A. P. ALLEN, Leadville, Pa. Pekin Ducks and S. C. W. Leghorns; 5 other varieties.

100 Black Langshans, from best strains for sale. Guar. F. E. Roberts, New Richmond, Ind.

One Prairie State Incubator, 300 egg, $27 cash, for sale. EMIL TRADELIUS, Hammonton, N. J.

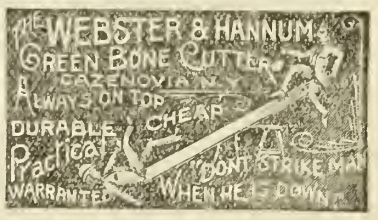
Eight varieties of fancy Pigeons for sale. Stamp for price list. ED STREBY, Amsterdam, N. Y.

225 each, No. 6 Envelopes, 6lb Note Heads and 3x5 Cards. Nearly printed. Use good cuts. L. C. STUMP, Angola, Ind.

I. X. L. POULTRY YARDS. J. F. Scholz, Prop., Erie, Pa. Eggs for sale from prize winning Gol. Wyandottes. Circ. free. Stock for sale.

W. G. MYER, Madison, Wis. Lt. Brahmas, B. P. Rocks, P. Cochins. Cockerels, $1.50 and $2; trios, at $4 and $5. Write.

FOR SALE CHEAP. Fowls and Chicks. 15 varieties. Stamp. A. S. SWARTLEY, Lime Lexington, Pa.



We do not make ourselves appear ridiculous by running down our competitors Bone Cutter. Our $11 hand Bone Cutter, running by power in competition with a $6 Power Cutter was awarded 1st Premium at Great Inter State Fair, Elmira, N. Y., New York State Fair, Syracuse, N. Y., and both 1st and 2d at Western N. Y. Fair, Rochester, N. Y. Circulars and testimonials free. WEBSTER & HANNUM, Cazenovia, N. Y.

W. F. B. SPANISH only. Circular and my photo free. J. BENNETT, Sunman, Indiana.

SPONGIA TABLETS (compound), the reliable Roup Cure. By mail. 35c. per box, 3 boxes $1.00. **W. W. HOGLE, So. Evanston, Ill.**

WANTED. American Dominique and Rose C. B. Leghorn stock, at once. Address Box 54, **Chambersburg, Pa.**

INDIAN GAME. Black and White Minorca stock for sale. Eggs in season. **REV. L. E. CRUMBLING, Hall, York Co., Pa.**

For Toulouse Geese, B. P. Rocks, S. S. Hamburgs, write to John W. Worthington, Hartland Mich. Special price for cockerels for the next 30 days.

Cough, Diarrhœa, Stock Powder, 3 tested, superior unequalled, receipes 50 cts. **B. F. DENSON, Morenci, Mich.** Lock Box 90.

DR. S. C. MOYER, Lansdale, Pa., breeder of L. Brahmas, B. and W. P. Rocks, S and W. Wyandottes and Aucorias. Choice stock for sale.

Home of the S. C. Leghorn. Buy my show birds and I will stay at home Dirt cheap. **H. C. HUNT, Delavan, Ills.**

PARTNER WANTED in Chick and Duck business. $200 capital. A hot water brooder 112 feet long. **O. S. DAVIS, Selma, California.**

IT WILL PAY YOU TO SEND FOR the Peep-'o-Day Brooder, Dover, Mass.

200 Barred P. Rocks, 100 S. C. B. Leghorns, 75 Ind. Games, 50 Gol. Wyans. Breeding Pens, trios or single birds. E. E. Hudson, Kennedyville, Md.

WANTED. A-1 Lop-ear Rabbits. Give description and price. **J. H. TERENS & SON, Mishicot, Wis.**

For sale.—Silver and W. Wyandottes, Part. Cochins, L. Brahs, G. Seebright Bants., German Hares, and Guinea Pigs. A. B. Wingert, North Hampton, O.

BUFF Wyandottes, Plymouth Rocks. FOWLS, EGGS. A clean sweep in prizes at World's Fair. **J. D. WILSON, Worcester, N. Y.**

BONE MEAL FOR POULTRY. Crushed Oyster Shells, Flint and Beef Scraps. Send for new price list. **YORK CHEMICAL WORKS, York, Pa.**

Prize Winning Buff, White, and Black Cochins for sale, cheap. I can furnish either breeding or exhibition birds. Write now. **J. A. SECORD, Searsburg, Schuyler, Co., N. Y.**

FOR SALE. A pen each of Buff Pekin Bantams, S. S. Hamburgs, Indian Games, P. Rocks, G. Wyandottes and White Wonders! Eggs in season. G. H. ST. JOHN, Meadville, Pa.

A BARGAIN. 50 pure large yearling S. C. B. Leg. hens. Forsyth, Fox, and other stock, $1 each; 16 for $15. 5 pullets, 1 cockerel, fine B Minorcas, $8. **W. W. KULP, Pottstown, Pa.**

25 EXTRA FINE Silver Wyandotte Cockerels for sale, $3 to $10 each. Some good Barred Plymouth Cockerels, $3 to $5 each. Orders booked now for incubator eggs; for broilers $6 per 100. **SUSSEX POULTRY YARDS, Newton, Sussex Co., N. J.** A. N. Cosner, Proprietor.

500 First-class Fowls For Sale. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata., telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, **J. R. BRABAZON, Delavin, Wis.**

AMERICA'S WHITE WONDERS!

Acknowledged to be the leading white fowl for **hardiness**, and all practical purposes. 32 of my exhibits were awarded premiums at the great R. I. Fair. 1st Premium and Silver Cup awarded this breed in Texas. 1st Premium and Diploma awarded White Wonders in Denmark, Europe. Send for standard and 10 page catalogue. **WM. N. FRENCH, New Haven, Vt., Originator.**

Mammoth New Catalogue Almanac

AND GUIDE TO POULTRY RAISERS. 64 large pages, printed in colors. Description of all leading varieties of fowls. Over 50 fine illustrations. Plans for Poultry houses. Remedies for all diseases. Recipe for Poultry Powders. The finest thing out—everybody wants one. Only 10c. C. C. SHOEMAKER, Freeport, Ill., U.S.A.

OUR $12 HAND BONE CUTTER TOCK 1ST PREMIUM OVER THE OTHER MAN'S $26 POWER CUTTER, AT GREAT INTERSTATE FAIR, ELMIRA, N. Y., NEW YORK STATE FAIR, SYRACUSE, N. Y., AND NOT ONLY 1ST, BUT 1ST AND 2D AT WESTERN NEW YORK FAIR, ROCHESTER, N. Y.

WEBSTER & HANNUM,

CAZENOVIA, N. Y.

KNAPP BROS.

WHITE LEGHORNS, WHITE WYANDOTTES AND PEKIN DUCKS, AT THE WORLD'S COLUMBIAN EXPOSITION, were awarded **Highest Honors**; 20 birds, 11 entries, **7 first, 3 second and 1 third Prize. First on Breeding Pen of White Leghorns. First on Breeding Pen of White Wyandottes. HIGHEST SCORING BIRD AND BREEDING PEN** on exhibition in **any variety**, an average of 95 points on our entire exhibit. Our usual **sweeping record** on these two popular varieties at the **WORLD'S FAIR.** Two of the **first prize birds** not in our exhibit are now in our yards. Our breeding pens, next season, will contain these prize winners. **Every first prize**, with one exception, and **five of the second prizes at N. Y. State Fair**, Sept. 14th to 21st. The **records** will tell **who** won the **prizes** at the **late N. Y. Show** and at **32 of America's leading shows** during the past 11 years. **TWO HUNDRED** selected early hatched **COCKERELS, Trios or Breeding Pens** and **FINEST PEKIN DUCKS** at low prices for quality. Satisfaction guaranteed.

We also offer R. C. White Leghorns direct from B. R. Knapp's prize winning strain—four **1st** and one **2d** prize at **World's Fair.** Send stamp for **new, illustrated** catalogue, giving **highest prize record** ever won by **any** breeder of **any** variety. Address

KNAPP BROTHERS,

BOX 501, FABIUS, N. Y.

F. R. MINNER, Bechtelsville, Berks Co., Pa., has for sale cheap if taken at once, Buff Leg., S. S. Hamburgs and Indian Games.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P.O. Goochland Co., Virginia.**

Poultry and Dairy Farm for Sale or Rent, near Sea Girt and Spring Lake, N. J. For particulars, address **ROBERT M. MORTON, 31 W. 65th St., N.Y.**

At Phila. 10 premiums on 9 entries, 7 Grand S. C., 5 R. C. Leghorn cockerels scoring from 92 to 95 honest points, for sale. W. P. Rocks scoring to 96. Pullets. W. W. Kulp, Pottstown, Pa.

White and Black Minorcas, Barred Plymouth Rocks and White Wyandottes. Stock at all times. Eggs in season. **WM. J. SCHAUBLE, Erie, Pa.**

Leghorns and Beagles. R. C. W. and Brown and S. C. Brown and Buff Leghorns and S. S. Hamburgs. 6 Beagles, 5 mos., from Reg. stock, top sale. **H. J. BROWN, Harford, Cort Co., N. Y.**

Fine lot young one-half Japs, April hatch, at $6 per trio if taken at once. IDE ROSSITER, Girard, Pa.

FOR SALE.—Perfect Hatcher, 1,008 capacity. Eureka Incubator, 300 capacity; both as good as new, at a bargain. Write with stamp enclosed to **A. C. KEEPERS, Latrobe, Pa.**

"DIRT CHEAP." Bar. Ply. Rocks, Black Minorcas, W. Wyans., Part. Cochins, Lt. Brahmas, Buff Leghorns, White Wonders, Ind Games. **PENINSULAR POULTRY YARDS, St. Ignace, Mich.**

EGGS FOR HIGH-CLASS **BARRED PLYM ROCKS** SEND TO J. T. FRENCH 338 SUSANNA STREET TOLEDO, O. $2.00 PER SITTING

THE IMPROVED VICTOR INCUBATOR

Successfully Hatches Chickens by Steam.

Absolutely Self-Regulating.

The Simplest, Most Reliable and Cheapest First-class HATCHER in the market.

Circulars Free. Catalogue 4 cents.

GEO. ERTEL & CO., QUINCY, ILL.

MONEY SAVED!

☞Order your periodicals of us, and save money. Look at this list, and see that you get in many instances two papers for less than the price of one.

	Publisher's Price.	Price with our paper included.	Our Price Alone.
Amateur Sportsman, N. Y.	$1 00	$1 05	$ 85
American Agriculturist	1 50	1 65	1 30
" Bee Journal, Chicago	1 00	1 45	95
" Farmer, Springfield	50	85	45
" Stock-Keeper	1 00	1 35	90
Art Amateur	4 00	3 95	3 [illegible]
Arthur's Home Magazine	1 00	1 20	85
Babyland	50	85	45
Bee Keepers' Advance	50	80	45
Breeders' Gazette	2 00	2 25	1 85
Century	4 00	4 05	3 75
Chicago Weekly Inter-Ocean	1 00	1 40	95
Christian Herald	1 50	1 70	1 30
City and Country	50	80	45
Cosmopolitan	1 50	1 85	1 45
Cultivator and Country Gentleman	2 50	2 40	2 00
Demorest's Monthly Magazine	2 00	2 15	1 75
Detroit Free Press	1 00	1 45	95
Dog Fancier	50	80	40
Fanciers' Journal	2 00	2 10	1 65
Fanciers' Monthly	1 00	1 25	95
Fanciers' Review	35	65	30
Farm and Fireside	50	95	45
Farm and Home	50	80	45
Farm Journal	50	70	40
Farm Poultry	50	70	40
Farmer's Review	1 25	1 60	1 15
Frank Leslie's Ill. Newspaper	4 00	4 00	
" Popular Monthly	3 00	3 00	
Game Breeder	95	1 20	80
Game Fanciers' Journal	50	80	45
Game Fowl Monthly	1 00	1 10	75
Gefluegel Zuchter	50	85	40
Godey's Magazine	3 00	3 30	2 60
Golden Days	3 00	2 95	2 96
Harper's Bazaar	4 00	3 90	3 06
" Monthly	4 00	3 90	3 50
" Weekly	4 00	3 90	3 55
" Young People	2 00	2 20	1 05
Home Queen	50	70	65
Horseman, Chicago	4 00	3 85	3 80
Household	1 10	1 30	40
Housekeeper, (Minn)	1 00	1 25	60
Lippincott's Magazine	3 00	3 00	2 95
Ladies' Home Journal	1 00	1 30	40
Michigan Poultry Breeder	50	7[illegible]	60
National Stockman and Farmer	1 50	1 70	1 95
New England Fancier	50	75	45
New York Tribune, weekly	1 00	1 25	30
" World, weekly	1 00	1 40	45
Our Little Ones	1 50	1 60	1 75
Peterson's Ladies' Magazine	2 00	2 00	1 95
Philadelphia Weekly Press	1 00	1 40	25
Philadelphia Weekly Times	1 00	1 40	75
Phrenological Journal	1 50	1 60	1 20
Poultry Bulletin	50	85	40
Poultry Chum	25	60	25
Poultry Journal, (American)	1 00	1 00	75
Poultry Journal, (Ohio)	1 00	1 00	75
Poultry Herald	50	80	45
Poultry Monthly	1 00	1 25	90
Poultry Topics	25	60	20
Poultry World	1 25	1 30	1 00
Poultry Yard, (American)	1 50	1 70	1 35
Practical Dairyman	50	70	40
Practical Farmer, Philadelphia	1 00	1 25	90
Practical Poultryman	40	85	45
Prairie Farmer	1 00	1 30	90
Presbyterian Journal	2 00	2 [illegible]	1 75
Scientific American	3 00	3 [illegible]	2 85
Seedtime and Harvest	50	7[illegible]	35
Southern Fancier	50	9[illegible]	45
The Fancier (Pigeon)	1 00	1 2[illegible]	85
Toledo Blade	1 00	1 4[illegible]	90
Vick's Monthly Magazine	50	7[illegible]	45
Western Poultry Breeder	25	60	20
Western Poultry Journal	50	70	45
Wide Awake	2 40	2 60	2 30
Youth's Companion, new subs only)	1 75	1 80	1 40
Youth's Companion, (renewals)	1 85	2 00	1 90

CLEAR GRIT FOR POULTRY.

Send stamp for sample. **D. LINCOLN ORR, Supt. ORR'S MILLS POULTRY YARDS, ORR'S MILLS, N. Y.**

SMITH BROS., True Grit Poultry Yards, Berea, Ohio. For sale Mammoth L. Brahmas, Indian Games, R. C. B. Leghorns, Golden and Silver Laced Wyandottes and Barred Plymouth Rocks, also 150 Stags, Pullets and Cocks. Kentucky Dominicks and Irish Black Reds. Irish and Mexican Grays. Every bird warranted dead Game. Eggs in season.

CHOICE STOCK FOR SALE

after June 1st. On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars. EMERY S. PUGH, Utica, N. Y.**

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes**, Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.** by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

BOOM THE LEADERS!

The two best poultry papers on earth are

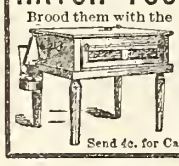
FARM POULTRY..... 50 cts.
and
POULTRY KEEPER..... 50 cts.

We will send **both**, for one year, for **only 70 cts.**

I. S. JOHNSON & CO., Boston, Mass.

HATCH YOUR CHICKENS!

Brood them with the IMPROVED JUNIATA INCUBATOR AND BROODER.

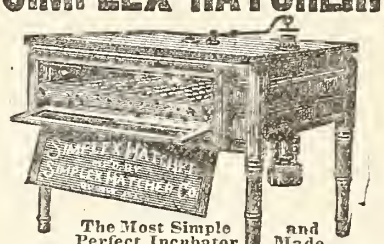


The latest improved hatcher in the world. *Reliable, Perfect, Self Regulating.* Heated by a radiator. The most scientific incubator made. Guaranteed to hatch perfectly. KEAGNS & ALEXANDER, Send 4c. for Catalogue. Yeagertown, Pa.

Spratts Patent

Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys; it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N Y

SIMPLEX HATCHER.



The Most Simple and Perfect Incubator Made. Quick and certain; Hatches every egg that a hen could hatch; Regulates itself automatically; Reduces the cost of poultry raising to a minimum. **Best in every way—lowest in price.** Send for Illustrated Catalogue.

SIMPLEX HATCHER CO., Quincy, Ill.

A SPLENDID OPPORTUNITY

TO OBTAIN A

High Class Religious Weekly Paper.

SABBATH -:- READING.

A SIXTEEN-PAGE PAPER, NO POLITICS, NO SECTARIANISM, NO SECULAR NEWS.

Nothing but the BEST READING for Sunday.

Live Reports of City Missions, showing what is being done in New York among the degraded and outcasts of both sexes; how they are invited to meetings, how they become converted, their testimonies for Christ, etc., etc.

Sermons, Sunday-School Lesson, Treatment of the current Christian Endeavor Topic, Mothers' Afternoon with the Children, and other most interesting Sunday reading.

The publishers of THE POULTRY KEEPER have made arrangements whereby the following unprecedented offer can be made:

TO ALL WHO SEND US

75 CENTS

we will send the POULTRY KEEPER for a year, and will also send

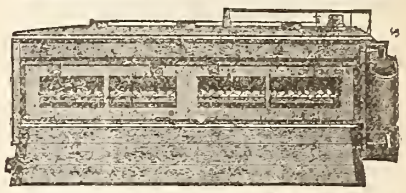
SABBATH READING

For a whole year

postpaid, absolutely free.

This is a grand opportunity to secure, free of all cost for a year, one of the best religious weekly papers published. Just think, a 16-page paper, stitched and trimmed, 52 weeks. Send to us for a free sample copy of *Sabbath Reading.*

POULTRY KEEPER CO., Parkesburg, Pa.



Won at Madison Square Garden, 1892. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 20 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular. **Jas. Rankin, South Easton, Mass.**

"Everything For The Poultry Yard."

Poultry and Supplies

MOST COMPLETE STOCK IN AMERICA.

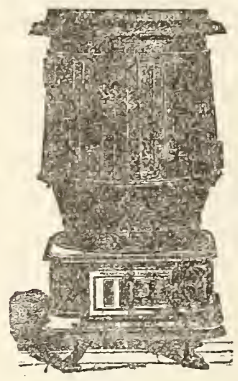
PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.

Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.

Do You Want Our Catalogue?

60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.

MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.



BROODER HEATERS

The only successful Heater made. Used by all poultry raisers.

Send for Circular

BRAMHALL DEANE & CO.,

264 Water St., N. Y.

83 Market St., Chicago.

A POULTRYMAN'S LIBRARY.

Low Cost Poultry Houses, illustrations of Poultry Buildings with actual cost, (a new book). *Price 25c.*
500 Ques. and Answers in Poultry Keeping. *25 cts*
Pigeon Queries, book for Pigeon Fanciers *25 cents.*
The Fanciers' Review, a large 16-p. monthly 50 cts a year, two years 75 cts. Printing for Poultrymen.
Address Fanciers' Review, Chatham, N. Y.

IMPROVED PEERLESS HATCHER

Sold under a guarantee that it is positively self-regulating and will hatch fully 80 per cent. of fertile eggs, or it can be returned and **money refunded.** Reasonable in price. **Self-regulating Brooders.** Send 4 cents for catalogue. **H. M. SHEER & BRO., Quincy, Ill.**

We are So Anxious
That you should see our new circular on

Poultry Supplies.

It illustrates the most complete line ever offered.

FREE

Johnson & Stokes,
—SEEDSMEN—
217 & 219 Market St., Phila., Pa.

ONLY $1.10! CANNOT BE EQUALED!

FARM POULTRY (Monthly)..... 50cts
POULTRY KEEPER (Monthly)..... 50 "
FARM and FIRESIDE (Semi-Monthly) 50 "
MODERN COOK BOOK..... 50 "
Total..... $2.00

All sent postpaid on receipt by us of cash or stamps, $1.10. Sample papers free. Address

FARM POULTRY,
Box F. P. BOSTON, MASS.

White and Bl. Langs., Buff and Wh Cochins, Ba. P.R'k. Stock and eggs. S.L. Farrar, Bath, Me.

M. F. PECK, Produce Commission Merchant, 534 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

DR. JOHN W. KING, Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

200 B. Turkeys from 18 to 24 lb. hens, 40 lb. tom. JOS. W. FLEMING, Buckingham, Ill.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

Jumbo I. Games. Frayne, Champion and Agitator strains. Cir. P. O. Hopkins, Hammansburg, O.

L. Brahmas, choice stock. 19 hens and 1 cock for $45. A. N. Doane, Gainesville, Wyo. Co., N. Y.

Black Minorcas. Twenty selected cockerels, at $1.60 each. O. K. PINNEY, Calkins, Pa.

For Sale.—Fowls and Chicks, 6 varieties. Incubatoreggs. Stamp. J. P. Hellings, Dover, Del.

PIT GAMES only. Stamp for circular to D. L. LONG, Lock Box 5, New Martinsville, W. Va.

4 Dollars a Trio. Leghorns, White and Brown, R. and S. C. Forsyth and Tyler strains. Cir. H. B. PINNEY, Calkins, Pa.

300 fine S. C. B. Leghorns and B. P. Rocks. Cockerels and pullets for sale. Circulars free. S. K. MOHR, Hilltown, Pa.

A. RISLEY MULLER, Praxton, N. Y. B. and W. P. Rock, W. Wyandottes and Red Cap cockerels. Very fine. Write for wants.

FOR SALE.—Cornish Indian Games, Barred Plymouth Rocks and Mammoth Bronze Turkeys. J. H. REIMS, Centreville, Ind.

BIG LAYERS. Rose Comb White Leghorns. L. N. LIGHTY, East Berlin, Pa.

White Fowls. Stock for sale, cheap. W. Polish, W. Cochins, W. Leghorns, bred from prize winners Cir. free. Geo. A. Friedrichs, Erie, Pa.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear rabbits.

Prize winning S. and W. Wyans., I. Game and P. Ducks. Stock and eggs for sale, send for Cir. M. H. LEIDY, Blooming Glen, Pa.

Low Prices.—Eggs in small or large quantities, also stock. S. C. W. Legs and W. Wyans., Knapp St., cross b'ds for br'ls. B. H. Noxon, Elm St, Ithaca, N. Y

Buff Legs., Bu P. Rks., I. Gms., Bl Mins., P. Rks. P. D'ks. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

W. G. MYER, Madison, Wis. Lt. Brahmas; B. P. Rocks; B. Langshans; P. Cochins. Young stock. Write for prices and description.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks, choice Cockerels $2 to $3 each. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. D. M. POLING, Van Wert, Ohio.

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. H. D. MOULTON, Taunton, Mass

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Plidlimmon strains. P. H. Jacobs, Hammonton, N. J.

Sweepstakes at Chicago, 1891 B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cock'ls, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. F. M. MUNGER, DeKalb, Ill.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. Boericke & Tafel, 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. Oldest Homeopathic Pharmacy. Established in 1835. *The Poultry Doctor*, 85 pp., 12mo, cloth, 50 cents.

LIKE WILL BEGET LIKE." 700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by "Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas," the grandest specimens of these varieties owned in America to-day. At New York, Feb. '90, won 4 grand Gold Specials, 8 firsts and 9 seconds on my specialties. "*Like did beget like.*" I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

Wanted at once.—Buff Leghorns, Ind. Games, Buff P. Rocks, Buff Wyandottes, Minorcas. Address Box 32, Washington, N. J.

LADIES!! Why Drink Poor Teas? THE GREAT AMERICAN TEA COMPANY. When you can get the Best at Cargo prices in any Quantity. Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums given to Club Agents. Good Income made by getting orders for our celebrated goods. For full particulars address THE GREAT AMERICAN TEA CO. P.O. Box 289. 31 and 33 Vesey St., N. Y.

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in sea. Cir. W. A. Williams, Rome City, Ind.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. B. A. FOX, Richmond, Va.

Northup's Black Minorca. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. CHARLES RIVER POULTRY YARDS, Newton Lower Falls, Mass.

LIGHT BRAHMAS. Heavy winners at Bloomington, Ill., Dec. 1892, and Indianapolis, Ind., Jan 1893. Stock for sale. ALFRED DOYLE, Morgan Park, Ill.

PRESSEY'S BROODER. The Cheapest and the Best. Hammonton Incubators, two sizes, $25 and $15. Laughshan fowls and eggs for sale. Circulars free. G. W. PRESSEY, Hammonton, N. J.

Now is the time to order your Sheep and Beagle Dogs I have some extra fine Hampshiredown Ewe and Buck Lambs for sale, also Poland China Pigs and broken Beagle Dogs, variety of Poultry. Stamp for Cir. A Elwyn Strode, West Chester, Pa.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To J. L. CAMPBELL, West Elizabeth, Pa. This ad is good for $5.00 part pay for an Eureka Incubator

LEARN TO CAPONIZE INSTRUCTIONS MAILED FREE WM. H WIGMORE, 107 S. Eighth Street, Phila., Pa.

350 BARRED PLYMOUTH ROCKS Trio, $3.00, $3.50 to $4.00 for best breeders. Best cockerels, $1.50. A. Q. ROBERTS, Atlantic, Iowa.

BUY THE BEST. The Improved Monitor Incubator. Hundreds of Testimonials from all parts of the world as to its merits over all other makes. Large book with cuts for stamp. Address A. F. Williams, Bristol, Conn.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.90, postpaid. They make handsome and valuable books. Address Poultry Keeper Co., Parkesburg, Pa

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the $5 HAND MILL (F. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also POWER MILLS and FARM FEED MILLS. Circulars and testimonials sent on application. WILSON BROS. Easton, Pa.

MAPLE FARM DUCK YARDS. The Largest Duck Farm in America Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices JAMES RANKIN, South Easton, Mass.

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

Valuable Books Given for Securing New Subscribers at 50 Cents Each.

No. of Subs.		*Value.*
1	Hile's Book on Incubation	$ 25
1	Practical Caponizing	25
1	Standard American Poultry Book	25
1	How We Made the Old Farm Pay	25
1	Index to any Volume of POULTRY KEEPER	10
1	Poultry for Profit	25
1	Incubators and Brooders	25
1	Management of Young Chicks	25
1	"Poultry Keeper Special for 1887,"	25
1	"Poultry Keeper Special for 1892,"	25
1	Kendall's Horse Book	25
1	Temperance Volume	25
2	Complete Poultry Book	25
2	Diseases of Poultry	25
2	Breeders Egg Record and Account Book	25
2	Five Hundred Questions Answered	25
2	How to Tell the Age of a Horse	35
2	All About Broilers and Market Poultry	25
2	A. B. C. of Strawberry Culture	40
2	American Corn Husker	55
2	Knitting and Crochet	50
2	Indian Game	20
2	Moisture Guage	20
2	Willis' Veterinary Practice	55
2	Chicken Marker	25
2	Practical Poultry Keeping	50
2	Natural and Artificial Duck Culture	50
2	Silos and Ensilage	50
2	Small Fruits and Poultry	30
2	Fisher's Grain Tables	30
2	Scribner's Lumber and Log Book	35
2	How to Select Cows	50
3	Standard and Commercial Poultry Culture.	1.00
3	Ladies' Home Journal	1.00
3	Gentleman's Long Leather Pocket Book	75
4	Kidder's Secrets of Bee Keeping	75
4	Mrs Parker's Complete Housekeeper	1.50
4	How to be Your Own Lawyer	1.50
4	The People's Doctor	1.50
4	Everybody's Paint Book	1.50
5	Compendium of Cookery	1.00
5	Affleck's Farmers Record and Acc't Book	3.55
6	A. B. C. of Bee Culture	1.20
6	American Standard of Excellence	1.00
6	Philosophy of Judging	1.00
6	Guenon's Milch Cows	1.00
10	Cruden's Unabridged Concordance	2.00
10	Polyopticon	2.50
12	Blakelee's Cyclopedia	3.00
12	Caponizing Set	3.00
12	Webster's Unabridged (Reprint) Dictionary, (full sheep bound)	2.50

THE BEST POULTRY FENCES, Galvanized Wire Nettings, ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.40 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent. PETER DURYEE & CO., 215 Greenwich St., N. Y. SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Caps and Nails. Sample and circular free. A. F. SWAN, 38 Dey St., N. Y.

OUR CATALOGUE FREE POULTRY SUPPLIES HARVEY SEED CO. BUFFALO, N.Y.

The Prairie State Incubator takes the Three First Premiums at the Great New York Show, Madison Square Garden, February 24th to March 4th, 1893. First Premium, $25.00 in gold, for best hatch, First Premium, $25.00 in gold, for best Incubator. First Premium, $10.00 in gold, for best Incubator. Selling at a price not exceeding $40. This is the most wonderful record ever made. We now have 94 First Premiums on Incubators and Brooders. 53 Diplomas. Our machines are sold by the largest breeders in the United States. Address for eighty page catalogue. ALL MACHINES WARRANTED. PRAIRIE STATE INCUBATOR COMPANY, Homer City, - - - Penna

How To Make Money WITH A FEW HENS Is the Teaching of FARM-POULTRY. A Live, Practical Poultry Raising Guide. It is acknowledged to be "The Best Poultry Magazine Published" in the world. Send for Index to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. Subscriptions can begin with any back number you desire. Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? Do you care to learn how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "What has been done, can be done again." Remember the price; 50 cts. one year; six months 25 cts.; sample free. Remit cash or stamps. I. S. JOHNSON & CO., Boston, Mass.

MANN'S BONE, VEGETABLE, AND CLOVER CUTTER FOR POULTRY FOOD $10.00 is the price of the Our new combination cutter. SIMPLEX Automatic, self-adjusting feed, leaves both hands free to work. $10.00 It will cut bones or vegetables FOUR TIMES AS FAST as any $12.00 Bone Cutter on the market and it is also an excellent Clover Cutter. Any boy can run it; it cuts fine, fast and easy. Fully warranted for one year. Catalogue free if you mention this paper. F. W. MANN CO., Milford, Mass.

BONE AND SHELL FOR POULTRY. Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The lime or oyster shells furnishes shell material. The *granulated* size is for *adult* fowls; the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address FITCH FERTILIZER WORKS, BAY CITY, MICH

High scoring Barred Plymouth Rocks. Extra fine fowls for sale. L. W. PYLE, Bryn Mawr, Pa.

50 fine Ind. Game for sale, best stock, $1, $2 and $3 each. A. H. TYSON, Lansdale, Pa.

HATCH CHICKENS BY STEAM. THE IMPROVED EXCELSIOR INCUBATOR WILL DO IT. Thousands in Successful Operation.

Lowest-priced First-class Hatcher made. GUARANTEED to hatch a larger percentage of fertile Eggs at LESS COST than any other Incubator. Double-Regulator. Send 6 cents for large Illustrated Catalogue. Circulars Free. SIMPLE, PERFECT, and SELF-REGULATING. GEO. H. STAHL, QUINCY, ILL. PATENTEE AND SOLE MANUFACTURER.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Can't Get Rid of Lice.—What shall we do to get rid of lice? We have tried everything that we have heard or read about in the POULTRY KEEPER, and still have lice. We keep everything about the fowls perfectly clean, cleaning the house each morning and using plenty of whitewash frequently. Is there no easier way than to catch each bird and rub his head and neck with oil? We tried the artificial way of hatching last summer, on a small scale, with good success, and lost very few chicks after learning how to feed them. We now have about 800 pullets (selling the roosters) beginning to lay, and also trying to die, from no other cause than lice.—Mrs. W. R. W., Hanford, Calf.

Drench every portion of the premises with kerosene emulsion or kerosene.

Fresh Blood.—What is the value of fresh blood, and how should it be fed?—J. J H., Bernville, Pa.

It is equal to meat and may be cooked by boiling, or mixed with ground grain, allowing one pound of blood to a dozen hens.

Breeds.—Iron Roof.—1. I am three miles south of Lake Michigan, in a very sandy locality. What kind of a breed do you think would thrive best there? 2. I am about to build a house, and I can get a lot of sheet iron, such as is used on rolling mills, very cheap. Do you think this would make a good covering for a house, say 10x12 feet?—A. C. W., Kocomo, Indiana.

1. Probably the Light Brahmas would be very suitable. 2. It will answer well.

African Geese.—Where can I purchase African Geese?—Subscriber.

We do not answer such questions in this department. Send your full name, with stamp for reply.

Chicks Died.—I lost about half of my White Leghorn chicks last spring from a disease new to me. When about three weeks old they drooped, continued to eat, but grew poor until they died, being nothing but skeletons.—Mrs. E. D., University, Cal.

Cause was no disease, but the large head lice.

Brown Leghorn Comb.—Is a Brown Leghorn male impure if he has more than five points (serrations) on his comb.—A. J., Springfield, Ohio.

The extra points do not indicate impurity. The standard calls for five or six.

Poultry House.—1. If I have my house on posts, two feet high, so as to secure double room, can I double my flock? 2. Will colored glass injure fowls as grit? 3. My runs will be 6x40 feet, do you think eggs will be fertile if ten hens and one male are in that space?—H V. R. C., New York City.

1. Yes. 2. It is better not to use such. 3. Yes, if kept busy scratching in litter.

Bed Bugs.—Do bed bugs infest a poultry house, and do they trouble the poultry?—Mrs. D. J. A., Helena, Mont.

Bed bugs are frequently found in poultry houses, and they attack the hens at night. Drench the house with kerosene.

Changing to Brooder House.—My house is twelve feet high, twelve feet long, ten feet wide, sliding window at back, and window at side and front, facing the north. It has shingle roof, weather boarded and painted. It has a place for a stove.—J. B. P.

No change is necessary. Simply place your brooder in the house, and keep 100 chicks in it until ready for market. They need not even be let outside.

Frozen Broilers.—Do "frozen" broilers mean chicks raised in the fall and kept frozen until spring? Do they bring as much as spring broilers?—C. W., Milwaukee, Wis.

Yes; they are fall chicks, but they do not bring the high prices.

Six Questions.—J. R. G., Chattanooga, Tenn.

Send your *name* and address, as we cannot answer your question here. *Initials* will not answer.

Poultry House.—Layers.—1. How large should a house be for fifteen hens? 2. Which are the better winter layers, Light Brahmas or Plymouth Rocks? 3. Is it necessary to have double walls, or a stove, in a poultry house?—A. C., Turner's Falls, Mass.

1. About 12x12 feet. 2. It is claimed that the Light Brahmas are better, but we doubt if there is any difference. 3. No stove is necessary; double walls would be an advantage but are not required.

Varmints.—I should like to get rid of "varmints," minks, foxes, etc., on an Island this winter, so as to stock with poultry in winter.—L. J. B., Fort Madison, Iowa.

We know of no method but to trap or hunt them. Can our readers suggest a plan. Poison is dangerous.

Several Questions.—1. Would a White Plymouth Rock and Light Brahma make a good cross for a general purpose fowl? 2. Would a white-crested Black Polish chicken, hatched September 1st, be old enough to breed from next spring? 3. Will black feathers in the crest change white when matured? 4. How old before you can distinguish the sex, and how may pullets be known?—Subscriber, Fitchburg, Mass.

1. There is no general purpose breed; the cross is as good as any. 2. Yes 3. No; there should be black feathers just in front of the white. 4. About three or four months old; the pullet has a softer crest, and the cockerels begin to develop their longer tails.

Douglas Mixture—How is Douglas mixture made and how used?—S. M. M., Covington, Ohio

One pound copperas, two gallons water, one gill sulphuric acid. A teaspoonfull in a gallon of water. It is best to avoid it.

How Many Chicks.—How many chicks can I raise in a pen 6x8 feet, and a yard 4x8 feet in winter. I will use incubators.—M. B. M., Hackensack, N. J.

About fifty until they are three months old, though some keep as many as 100

Chicken Pox.—My fowls have small black spots on their combs. The spots grow to the size of a pea and turn black, easily picked off, and leave a watery sore, and extends over the face, requiring about a week or ten days. They appear sleepy, have discharge at the nostrils, eat well, but do not hold their flesh.—J. M. T., Argentina Kan.

Probably chicken pox. Anoint with a few drops of a mixture of equal parts crude petroleum, sweet oil, cedar oil, and spirits turpentine. Keep birds warm and dry.

Minorca Cross.—Will Black Minorca and Black Spanish make a good cross, and will the progeny be sitters?—G. F. K., Putnam, N. J.

There is nothing to gain by the cross. As a rule, when two non-sitting breeds are crossed, the pullets of the cross are liable to sit, but much depends on the feed.

Breeding Stock—1 Would you advise the mating of a Plymouth Rock cockerel, hatched June 5th, with pullets one month older? 2 My Light Brahmas have no feathers on middle toes; does it disqualify them? 3. I have a Light Brahma cock, and wish to mate him with the pullets mentioned, and also with some Plymouth Rock hens, for broilers?

1. They will be old enough by April. 5. No. 3. It can be done.

Time to Begin Incubators.—When is a good time to begin with incubators?—S. E., Athens, Ohio.

Now is an excellent time.

Warmth for Chicks.—1. Can chicks be raised in winter, in a brooder house with no heat but that from the brooder? 2. How large should a brooder be to contain 100 chicks? 3. How old should they be before removed to the roosts?—S. H., Sloansville, N. Y.

1. It is best to keep brooder at ninety-five degrees and the house at eighty. 2. About one yard square. 3. About three months old, or when well feathered.

Keeping Birds Pure.—Can I keep birds pure if I allow the males to run with hens of another breed until spring and then put them with pure bred hens of their kind?—R. E. T., Regina, Can.

Yes.

Buff Cochins.—What do you think of Buff Cochins as an egg producer and meat compared with Plymouth Rocks or Light Brahmas?—W. T. R., Giles, Wis.

The Cochins will give excellent results if not too highly fed

CHLOROFORM IN THE POULTRY YARD.

The president of the British pharmaceutical conference is credited with having adopted and recommended the following for the happy dispatch of poultry A large, wide-mouthed stoppered bottle is kept charged with an ounce of chloroform. When a chicken has received sentence of death, it is held firmly under the left arm and its head slipped into the mouth of the bottle. A few deep inspirations follow, and the bird, without a struggle, becomes unconscious Then, holding it by its legs, its neck is dislocated by a quick stretch.

SCIENCE AS IS SCIENCE.

Mr. Edward Atkinson, whose fame as a scientist, or rather as a statistician, is well known, and whose "political economy" is usually figured out on the side of millionaires and banks, and whose results usually are that c-a-t spells cat, is having a little controversy with Dr. George D Johnson, in the *Southern Fancier*, on "saccharate of lime" "Doc Johnson does quite a lot of "squibbling" for the *Fancier* that no one knows of but himself and Editor Downs, but he never gets frightened at huge titles. He will not use "M. D." at the end of his name, and he hates "swelled head" in humans. In the last issue of the *Fancier* the aforesaid Atkinson, who has been recently "talking chicken," and who is mentioned as "Edward Atkinson, LL.D. Ph D." (whatever that means), makes the following lucid (?) explanation. He recommends molasses and oyster shells. But here is his letter.

[A critical reader of the *Fancier* wrote us, questioning the position credited to Mr. Atkinson, as shown in an article in the September issue of this paper captioned "Scientific Hen Food." Our critical reader maintained that oyster shell was insoluble, and that "saccharate of lime" was an incorrect term for oyster shells and molasses. Below is the Boston Scientist's answer to the above criticism.—ED. *Southern Fancier*]

EDITOR SOUTHERN FANCIER:

I am asked by you to reply to a critic of my suggested hen food, who, as you inform me, says that oyster shells and molasses will not make a "saccharate of lime." He says that my compound would be just oyster shells and molasses. All right, if the hens like it just as well and thrive on it, under that name, let it be called oyster shells and molasses. But I think your captious critic knows less about chemical science than I do, and that is imputing to him depth of ignorance which can hardly be measured I am a duffer in these matters practicing economy in nutrition in the first instance, and then finding out from a scientific friend how near I have struck off lines to which scientific terms may be applied.

I happened to know that hens require a great deal of nitrogen in their food, and a good deal of lime; I happened to observe that there is a great waste of skimmed milk in which the element of nitrogen is present in a large quantity; I happened to observe that there is a great waste of chaff in many of the corn mills which might give bulk to porridge. Now, then, I suggested to one of my friends, who is possessed by the hen fancy, that he might convert the waste chaff of a corn mill into hen food by cooking it slowly with skimmed milk, and then I went and did it myself. I cooked a half pound of what they call here "smuttings" from a corn mill—the meanest stuff that has any salable value. It is the little point that protects the germ of the corn and other chaff. To this I added four pints or four pounds of skimmed milk. I put it into my Aladdin oven, lighted a hand lamp and let it cook all night subject to evaporation. In the morning it was a thick porridge. I dried it off and sent it to an agricultural chemist, and he made me a return proving that my compound possessed almost the exact nutritive elements of the best bread made from fine wheat flour.

Next it occurred to me that hens need lime, and as I happened to meet my friend, the chemist, I mentioned this to him and he said "O yes, but you had better add little molasses with some oyster shells, because that will give you a saccharate of lime, which is a soluable salt."

I have looked into the matter since your hyper critical friend questioned this fact and I find that it takes between seven hundred and seven hundred and fifty pounds of water to dissove one pound of lime, but I find that four pounds of molasses will dissolve one pound of lime. Now you may call this solution "sugar of lime" or saccharate of lime," or "oyster shells and molasses," or whatever you please—only mix it with your porridge, and the hens will eat it and it will make bone and egg shell. If it is not oxidized or converted or put in solution in cooking, it will be in the digestive organs of the hens.

The poor farmer to whom I made this suggestion and who has tried this feeding is one who keeps careful accounts. He is not a fancy farmer; he farms for profit. He is only worth somewhere from one to twenty millions dollars now, and he works his farm in such a way as to teach his neighbors how to do the best kind of profitable farming. You might think he would be a poor farmer—he is a very rich farmer in the wealth of instruction that he gives. His manager says that this type of hen food is exactly adapted to its purpose at very low cost.

Now you know that you can impart flavor to the flesh of poultry. You know that the canvas-back duck gets its fine flavor from the wild celery on which it feeds around the Chesapeake Bay. I have therefore suggested to my friend, the poor farmer, to make some canvas-back ducks by converting my hen food into a duck food, adding some celery seed to the compound. Perhaps some of your readers will take this hint and raise some canvas back chickens. If they do I shall expect an early pair to be sent to me from various quarters as soon as they can be raised, making it a condition that they shall be forwarded in a cold storage car so that their flavor may not be impaired in the slightest degree.

It will especially gratify me if your hypercritical friend will make my hen food, first without the oyster shells and molasses and then add some oyster shells and molasses, trusting to the hens to convert it in such a scientific manner as may give him an opportunity to invent the right words for giving expression to the result. I will promise to adopt his praseology whenever he does so, giving him due credit for knowing more of chemistry and the English language than I do myself.

EDW. ATKINSON.

Boston.

Mr. Atkinson should stick to statistics, and he should also consult some other chemist, as well as try a few more experiments with his Aladdin lamp, with which he is to convince poor men that they can live on five cents a day, at which consummation they will also be expected to *work* for five cents a day also, or "living wages."

But the "LL D. Ph D." does not count in this case.

First, he knows that hens require a great deal of nitrogen in their food. Certainly—every chicken man knows *that.*

Then he suggests that chaff of corn and *milk* might be used, and, like Squeers, he did it. Just so—nothing new in *that.*

He states that he then made good bread for them. He had the *nitrogen*, so a friend suggested *molasses and oyster shells* (what a dose for a hen), which gave him "saccharate of lime," which he styles a soluble salt. And so it is—but molasses and *oyster shells* do not form saccharate of lime. And that is where our Ph.D. stumbles.

He finds that it takes nearly 750 pounds of water to dissolve one pound of lime, but that four pounds of molasses will dissolve that quantity of lime. Again he stumbles, for *oyster shells are not lime.* They must be burnt (the carbonic acid driven off) to be converted into lime. Oyster shells are *carbonate* of lime (a salt) the same as marble or limestone. Lime is the oxide of calcium. Oyster shells will not dissolve in water or molasses.

Next he tells us that feed affects the flavor, and other things which we *knew*, as though we were all fools and could learn nothing by experience.

We know all about molasses, but it is too *fattening*, and a laying hen should not be fed too highly on carbonaceous food. The bran, the milk, the corn, the mixture of a variety is well understood, and so is the molasses. Poultrymen have known of oyster shells for twenty years or more, and of ground bone and other lime foods, but this Rip Van Winkle, Ph.D, who, like all others of his kind, resorts to ridicule or his reputation to overawe a less pretentious individual, comes in at the eleventh hour with a lot of so-called advice which is as stale as the hills and really of no value.

FIGURING ON FOOD.

Mr. Edward Atkinson, of Boston, is the champion performer of sleight-of-hand tricks with figures. He can take the nine digits and a few naughts and prove more wonderful things than were ever dreamed of in the philosophy of Horatio. He can calculate (of course he can, being from Boston) the money value of the time lost by the habit laborers have of pausing to spit on their hands, or the cost per ton per mile of transporting a car load of freight around the world in ninety days. There is no problem too minute, too great or too intricate for him to solve. He says American laboring men pay too much for food, by buying the needed nutritive constituents in such combinations as make them altogether too expensive.—*Texas Farm and Ranch.*

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers Price sixty cents, postpaid

VOL. X. PARKESBURG, PA., JANUARY, 1894. No 10

CONTENTS.

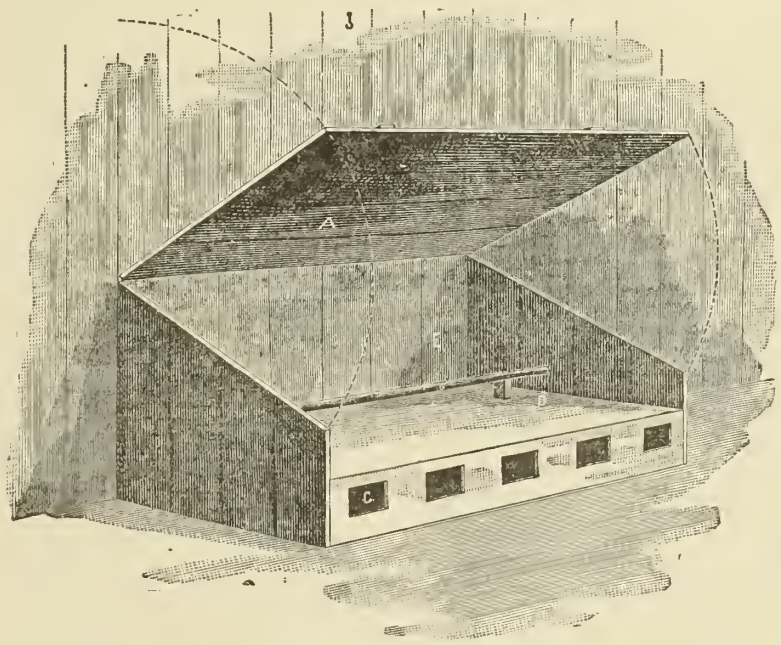
A Covered Roost -Papering the Wall—Analysis of Bone—Fish Oils as Insect Destroyers—The World's Fair Show. 145
The Prairie State Incubator—The Dorkings and Hardiness—The Temperature. 146
The Webster and Hannum Cutter—Something Left Out—Harboring Vermin—Filthy Poultry Yards—Poultry and Pork. 147
The Catskill Fair—This and That—Feeding—Destroying Lice—An Opinion on Corn—Non-Sitters—Killing the Lice—A Successful Poultry Farm—How to Raise Chicks—Is it Scrofula?—She Keeps up the Work—A Scientific Egg Food. 148
Brief Remarks from Readers: Marked the Whole Paper. Egg-Eating Hens, Be a Little More Particular, Cold Ashes and Lice. An Excellent Poultry House, A Single Number Paid, Plymouth Rocks as Layers, Keeping Accounts, Good Hatches, Wyandottes, A Record of Ten Hens, From Utah, From New Zealand—Feeding Useless Birds—Cabbage for Poultry—Turkeys for Breeding—Cold Poultry Houses—Variations in an Incubator—Sit or Set—Sources of Lice—Meat and Bones—New Houses are Damp—The Leghorn Fowls—Dry Dirt on the Floor. 149
Especially For Our Readers—A Curious Advertisement—The Dust Bath—Duck Eggs ,For Hatching—Brahmas vs. Leghorns—Chicks and Snow—The Heroic Hen—The Light Brahmas—Inherited Diseases—Sour Milk—Double Walls—Roosts—Lameness — Broken Eggs—Nests For Sitters—The Droppings—Plenty of Glass—Light Color of Yolks—Frosted Combs—The Guinea-Fowl—That Draft of Air—Raising the Temperature—Poultry For Profit—Something You Want. 150
He Says He Did Not Do It—Shows to Occur—Atkinson's Hen Food—The Breeding Yard. 151
Editorial Items—The New Orleans Show—Something About a "Bluff"—The Cheapest Thing Out—A Chance For You—The Progress Made. 152
Tree Tops and Eggs—Meeting of New Jersey Breeders—Los Angeles Makes New Departure—Management of Young Chicks—Separating the Profit—Mentionings—Crossing with Muscovys—A Fence For Ducks. 153
Mr. Kinney on Meat—Winter Foods—Ducklings For Market—Poultry-House Floors—Extra Large Stock—Swelled Heads and Eyes—Breeds For Laying—How to Catch a Fowl. 154
Where the Profit Comes In—Old Hens For Breeding—Increase In Weight of Ducks—Bones Or Oyster-Shell—Lime For Roup and Gapes—Dry Food For Chicks—Hens and Brooders—Poultry House Ventilation—Watering the Hens in Winter—Balancing a Ration—Don't Buy Disease—Brooder-House Designs — How Much Land?—Begin the New Year Right—Hatching Turkeys In Incubators—How To Feed Laying Hens. 155
A Pointer On Roup—Fattening Turkeys—Warts On Chickens—Chickens as Scavengers—A Sure Way to Kill Lice—Mating Rouen Ducks—Owls and Hawks—Feeding Dough—Sebright Bantams—Lawn Clippings For Winter—Cash and Poultry. 156
The Latest From Atlanta—Howard County (Indiana) Poultry Show—Regulating the Grain Supply—Dominique Leghorns—Warming the Poultry House—The Hen Out of Season—Five Cents Per Pound—Feeding For Eggs—Heating A Poultry House—Carbolic Acid Emulsion. 157
Advertisements. 158
Advertisements. 159
Bureau of Information—Books For Five Cents Each—The Von Culen Incubator at Chicago—Chopped Turnips For Geese. 160

CHEAP PAINT FOR POULTRY HOUSES.

A little paint covers a multitude of faults and for a poultry house any kind of cheap oils will answer. The painter, when he applies the first coat, known as "priming," aims only to saturate the wood with oil, rather than to apply a thick paint, and he often uses crude petroleum for reducing the paint. Now, if any one will procure some red oxide of iron, which is the cheapest coloring material used for paint, and add about one pound of the coloring matter to a gallon of crude petroleum or fish oil, a cheap paint will be the result, and it will last for a year or even two years. Of course it will not be equal to white lead and linseed oil paint, but where one can do the work himself and does not expect a "finished job," the cheap paint mentioned will serve well, as the oil is, after all, the most important ingredient in paint, the mineral being often only to give the required color.

A COVERED ROOST.

Roup and other diseases are often due to the drafts on the fowls while they are on the roost. An arrangement by which the fowls may be protected at night is shown in the illustration. A is a hinged cover, which can be raised or lowered as preferred. There is a space between the lower end of the cover and the floor (D) which permits not only of plenty of ventilation, but which serves as an ingress or egress for the fowls when going on or leaving the roosts. B is the roost, C the nests, and E shows the back wall when the cover is raised. This arrangement does not differ from that mostly in use except the cover, which may be easily attached to any roost. It may be made of cheap boards, especially of light material, or it may be made by attaching muslin or tarred paper to a frame constructed of lath. The cover should be raised during the day and fastened to the wall, but at night, after the hens are on the roost, it should be lowered to its position. It will greatly assist in protecting the fowls and keeping them warm on severely cold nights.



A COVERED ROOST.

PAPERING THE WALL.

Dissolve a pound of glue in a gallon of water by boiling, and add another gallon of water before taking it off the fire. In a bucket make a paste of rye flour, of a thin consistency, and add it to the glue water. Put the whole on the fire, let boil and thicken with more rye flour until a good paste is formed. Now take brown paper or old newspaper, and paper your poultry house. When dry, or the next day, put on another layer of paper. Add some whitewash to the paste and whitewash the paper. Your house will now be warm. Take off the paper before summer or it will harbor lice.

ANALYSIS OF BONE.

Mr. W. P. Wheeler, of the New York Agricultural Experiment Station, thus gives the composition of bone. We suggest that this be kept for reference. He says:

The proportion of water in fresh bone, as you are aware, varies somewhat. The amount of moisture in the fresh bone fed during a period of about eight months, and of which record was kept, varied from about thirty to about forty per cent.

Of many samples of bone (mixed lots) taken during several months the average composition was as follows:

Moisture	34.2 per cent.
Ash (mineral matter)	22.8 "
Fats	20.5 "
Albuminoids	20.6 "
Undetermined Organic constituents &c.	1.9 "

The ash contained 87.4 per cent. of phosphate of lime, 11.5 per cent. of carbonate of lime, and 1.1 per cent. of other mineral constituents.

Analysis which you may find of pure bone freed from any adhering substance substance will differ considerably from this which is of the average bone as fed, containing a small amount of adhering muscle, etc.

Fresh bone is undoubtedly one of the very best of poultry foods, and in my opinion should be finely cut. I prefer not to risk feeding ground bone, which may contain large splinters to hungry chicks.

In the above it will be noticed that bones are almost *complete* food. They contain, in 100 pounds, over twenty pounds of fat (heat producing and yolk producing), over twenty pounds of albuminoids muscle producing and white of eggs producing, and twenty-two pounds of ash, of which about nineteen pounds is *phosphate* of lime, (bone forming material), and over two pounds of carbonate of lime (same as oyster shells). Can any food be more complete.

FISH OILS AS INSECT DESTROYERS.

Whale oil soap has long been known as efficacious against insects and parasites, and it is well known, also, that the ordinary cheap fish oil will destroy fleas and other pests of like kind. The oil may be swabbed on the roosts or other portions of the house. You may not like the odor, but neither will the insects enjoy it. To cheapen the cost of the oil, make a soap of it. This is done by procuring a box of concentrated lye and using the fish oil instead o grease. It may be then used like any soap making soapsuds with it. It will be found a pleasant and harmless preparation for sprinkling over every portion of the poultry house. Dogs and cats, when dipped in the suds or washed with the same, will be free of fleas, while the use of the suds for spraying trees will be of advantage in destroying the fruit pests.

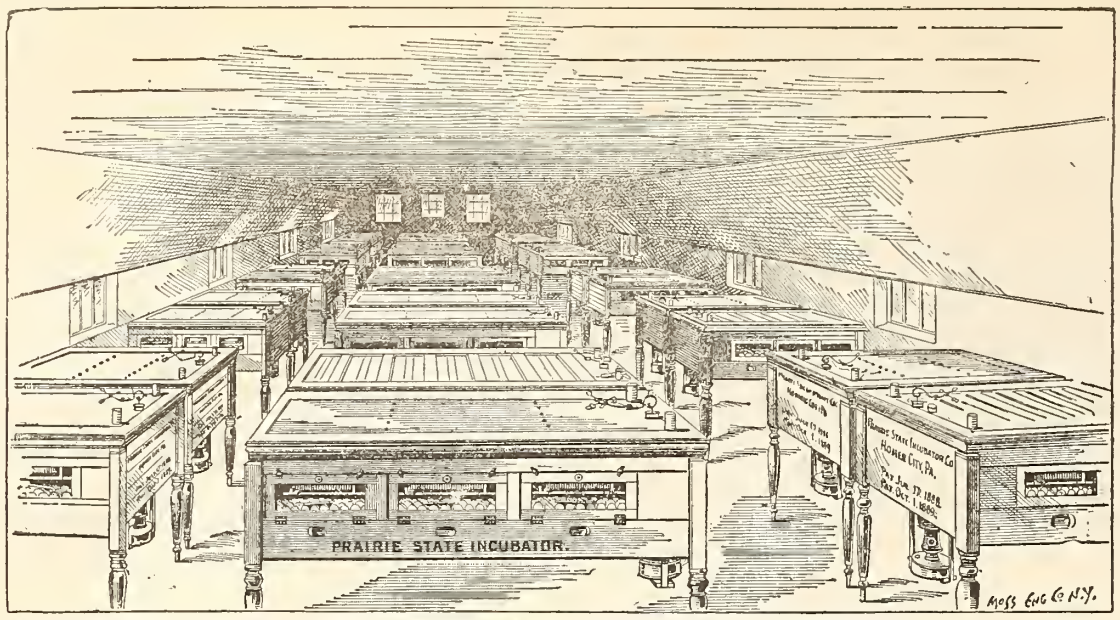
THE WORLD'S FAIR SHOW.

The editor of the *Poultry Herald* was at the World's Fair Show, and uses plain language in commenting upon it. We give his remarks below (our italics), and he takes a fair view of the show, even defending it. He says:

Correspondents of the *Herald* seem to agree with one another that the World's Fair poultry show was something of a fake and unworthy of its claim as a representative exhibition of thoroughbred fowls. One of our correspondents admits that he did not even visit the Fair during the Poultry Exhibition, but gained his knowledge from other sources. Experience teaches us that that it is the easiest matter in the world to condemn and find fault; the victims of this habit almost make a profession of it and it is not a difficult one to follow, because of the many imperfections in everything of human origin or contrivance. The *Herald* asserts without fear of successful contradiction that however it fell short of perfection, it was by far the best and most magnificent display of pure bred fowls ever brought together in America. The exhibition was a revelation to thousands of people who never before had an opportunity of seeing such specimens of poultry, and the influence it has had in the interests of higher poultry culture will be far-reaching in its effects. *If there were officers or members who so far forgot themselves* or the occasion as to lower their *personal honor* for the bauble of a *few dishonestly won prizes or emoluments, theirs is the disgrace.* There are even some who mistake such a "success" as an evidence of smartness, and to these all personal allusion simply advertise and assist the men who are talked against. *Of all the mean, contemptible spirits, the one that shows itself in deceitful, underhanded practices to prove excellence by fraud in a poultry show is the most beggarly.* Any man, it seems to us, is deficient in mental calibre who is willing to sacrifice his honor or manhood for such trifling rewards, and we therefore would be slow to accuse anyone without unmistakable evidence of guilt. The exhibition, as an exhibition, was a grand one, and the *Herald* declines to drag it in the dust because of alleged dishonesty of a few men who would abuse an important trust for the sake of a temporary advantage.

The above is plain language, and it seems to us that the editor is even charitable. He is willing to uphold the good and condemn the bad. Yet there are men who went to the show, *saw with* their *eyes* the unfairness and "hossism," yet are willing to condone the offence and lick the hands of those who deprived honest men of prizes that rightfully belonged to them.

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of the paper for a year.



INCUBATOR ROOMS OF A. J. HALLOCK, SPEONK, L. I., AND S. B. WILCOX, CENTER MORICHES, L. I., USING 30 PRAIRIE STATE INCUBATORS EACH.

THE PRAIRIE STATE INCUBATOR.

In this issue we give a full description of the Prairie State Incubator, made by the Prairie State Incubator Company at Homer City, Pa. These machines have been operated under all conditions of climate and altitude, from the low, damp, foggy sea-coast to the dry uplands of the Rockies; under the extremes of temperature north and south, winter and summer, without in any way affecting the uniformly good results. These results are obtained in the most direct manner possible without the aid of hot water or complicated mechanism of any sort. The regulator controls the heat without in any way affecting the ventilation or moisture; a point that cannot be overlooked in a successful incubator. The distinctive features of the Prairie State are set forth in the following description:

APPLICATION OF HEAT.

The first essential to successful incubation is the proper application and regulation of the heat. The nearest practical approach to nature's method which is by contact, is secured by radiation of heat from above, no bottom heat being applied in either case. The distribution of the heat is secured in the following manner: The lamp is so situated that its flue passes upward through the machine and through the radiator, at which point we have an opening in the flue, through which the hot air in the lamp is diverted into a galvanized iron radiator covering the entire top of the egg-chamber. After circulating through the radiator, the air passes upward and out two pipes at the end of the machine, thus equalizing the heat everywhere in the egg-chamber. The regulator consists of a thermostat, connecting rod and valve lever —the simplest combination in use on any incubator. The motive power of the regulator is the thermostat, unassisted by clock work, electricity, or any other appliance. The thermostat is situated in the egg-chamber, immediately above the eggs, and is so sensitive that it responds to the heat's action with as great precision as any thermometer. It may be easily adjusted to any degree of temperature desired, and there it will faithfully operate, opening and closing the valve with unerring exactness. This thermostat is composed entirely of metal, no composition, ebonite or India rubber being used in its construction; and it will not become weak or ineffective by use.

The valve when closed covers the top of the lamp flue and obstructs the current of hot air, forcing it into the radiator as above described. When the temperature in the egg-chamber reaches the desired degree, the thermostat lifts the valve from the top of the lamp flue and allows the heat to escape from the heater, while the air of the egg-chamber is unaffected by the opening of the valve and remains unchanged.

THE VENTILATION.

The second essential is a supply of pure air, which, in the "Prairie State" enters from below within a tube which surrounds the lamp flue, where it is heated as it ascends and passes over the moisture pans that are situated in the center of the machine and in the top of the egg-chamber. The warm air thus entering over the moisture pans and passing downward among the eggs escapes through the apertures in front, below the eggs. They are supplied with sliding covers, so that the outlet of air can be increased or diminished.

MOISTURE.

The third essential—the system of ventilation—aids materially in controlling the air saturation, since an increased or diminished supply of air will affect the supply of moisture. How? With a wide opening of the slide the air moves through the machine rapidly and carries the moisture out, while with a small opening the air passes slowly over the pans, absorbing a large quantity of water and becomes densely saturated. Thus, it will be seen, the moisture in the egg-chamber can be fixed and maintained at any desired degree of air saturation, a condition that must not be overlooked in successful incubation; because over-saturation is as fatal as insufficient moisture. Thus it will be seen that the machine is built obedient to a predetermined plan, constructed on strictly scientific principles, fulfilling perfectly the three essential conditions for successful incubation, which are, the proper application of warmth, pure air, and the requisite amount of moisture, all regulated and under the exact control of the machine's own action.

CONSTRUCTION.

"The "Prairie State," as its name implies, was originally manufactured in Illinois; but it is now manufactured at Homer City, Pa. None but first-class work is sent out. Their new factories comprise steam plants thoroughly equipped with all the latest improved wood-working machinery required. The machine is built of the best well-seasoned material, neatly ornamented and finished, so as to constitute a handsome piece of furniture. It is double-cased and insulated from the influences of sudden changes of outside temperature, by proper packing. Its doors are of double glass, through which may be seen the thermometer and eggs, without the exposure of opening. All sheet metal work, pipes, pan and tank, is constructed of best galvanized iron. The regulator is made of brass.

Besides the foregoing, the sizes are practical and economical for various other reasons: First, it does not require any more time to operate two 300 egg machines than it does one of 600 egg capacity. As all large capacity machines require two lamps, it takes just as long to turn the eggs, and there is no saving of fuel. There is a decided advantage in the machines where three or four are required, from the fact that in order to accumulate, say, 1,000 eggs at one time, a large proportion of them cannot be fresh, and so a smaller per cent. of fertility will follow than if they had set in lots of 200 or 300, just fresh. Time can also be saved by the use of the egg-tester. When two or more machines are set at a time, eggs tested at the end of the first week can be doubled up after unfertile ones are discarded, and so one machine or more can be reset.

All kinds of eggs can be hatched equally well—hen, duck, turkey, etc., and natural or artificial gas may be used in place of oil, without trouble in making the change.

All incubators are provided with turning trays. Eggs are turned a tray full at a time without being handled. The lamp is made of good, stiff, galvanized iron, with a large ean screw. Complete and detailed directions for operating, extra wicks, egg tester, a thermometer for each tray, etc., are furnished complete with each incubator.

IMPROVEMENTS.

The improvements made in the incubator are as folows: The lamp is now placed at the end instead of in the center, thus securing a better distribution of the heat in the egg chamber, and making the lamp easier to remove from the swing. The ventilators are made longer and larger, enabling the machine to be used under the most extreme conditions of dampness or heat. By partially closing the ventilators, the machines can be run in highest and driest situations, the large pan surface preventing the evaporation of the eggs. All evaporating pans are sectional. The operator can give little or much moisture, as the case may require.

The egg chamber is now made deeper than formerly, which space is used for a nursery. The chicks after hatching drop below into a nursery; thus the doors are never opened until the hatch is over. This is a grand improvement, and the operator is able to seenre better hatches when the chicks that come out of the shell first drop out the way of the others while hatching.

A SPECIAL DUCK MACHINE.

This incubator has proved a wonder for hatching ducks. It is built especially for the hatching of ducks' eggs; and from the large number sold to some of the largest raisers of ducks in the United States, they are giving general satisfaction. They have only recently placed this machine on the market, but have sold quite a number of them, and in order to show how the Long Island duck raisers like them we herewith publish the names of some of the customers, and the number they have bought up to date:

S. B. Wilcox, Center Moriches, L. I.,	26 machines.
A. J. Hallock, Speonk, L. I.,	30 "
E. O. Wilcox, " "	14 "
Will Pye, " "	10 "
R. B. & C. H. Dayton, Speonk, L. I.,	4 "
Wm. H. Strong, " "	3 "
H. W. Rayner, " "	2 "
Chas. Stanaker, " "	6 "
O. J. Raynor, " "	2 "
C. N. Smith, " "	2 "
F. T. Sturling, " "	3 "
Sid. Raynor, " "	3 "
Ira G. Tuthill, " "	3 "

Also many others in the neighborhood of Speonk. The list is merely to show how they like them in one town.

CUT SHOWING THIRTY INCUBATORS.

The cut shows how extensively the Prairie State Machines are used by the duck raisers. While the Company write us that they could furnish many similar cuts showing from ten to thirty machines in use among the broiler men in Hammonton, this Company have over one hundred machines in use there and they could furnish cuts taken from incubator rooms in that town of a similar nature. The editor of this paper has visited this Company and knows from observation that they are building and shipping hundreds of machines every year, not only at home but abroad. Their new plant has just been completed, and they are now prepared to fill orders promptly. We are personally acquainted with the members of this Company and our readers can rest assured that they will receive fair and just treatment at their hands. Their 1894 catalogue has just been issued, and we think it will pay any one interested in artificial incubation to send and get one. Their catalogue shows views of their factory, interior views; show room ribbons, and portraits of a large number of Poultry breeders of the United States.

REPUTATION.

That the reputation of their machine is world-wide and its superior excellence everywhere appreciated, is evidenced by the fact that they are constantly receiving orders from France, England, Scotland, Ireland, Germany, Russia, Persia, Sweden, Norway, Italy, Spain, Belgium, Africa, Japan, West India Islands, Mexico, Brazil, Chili, Peru, and every State and Territory of the United States of America. At the numerous Expositions and Poultry Shows that they have attended, in competition for excellence, they have received high awards, and, in some cases, complimentary testimonials, especially at Madison Square Garden, New York; Atlanta, Ga.; Los Angeles, Cal.; Seattle, Wash.; Victoria, B. C.; Dallas, Texas; St. Louis, Mo.; Chicago, Ill.; Buffalo, N. Y.; Nashville, Tenn., etc.

THE DORKINGS AND HARDINESS.

The editor of the *Fanciers' Journal* makes the following strong point, and he knows just what he is saying. We give it below in his words:

And now we are told by one of the wiseacres of poultrydom that the Dorking is not a delicate bird in this country. That the reason it is unpopular here is on account of its indifferent laying qualities, and the prejudice against white-legged and skinned fowls existing. Such talk is nothing more than the "veriest bosh." If our misinformed brother will take a peep into the markets he will find that the white-skinned birds are selling right along, and have been for years. Further, he should know that there are quite a number of breeds in this country that are indifferent layers. If this editor had a better knowledge if market culture he would also know that only the hardiest of breeds are of any value to the business, and the Dorking *cannot* stand our climate. Mr. Tegetmeir says the cause of this is the inbreeding resorted to by the fancy.—*Fancier's Journal.*

The editor was one of a party of four who experimented with the Dorkings, and at one time they got a heavy and wide boom, but while standing at the head of table fowls they were difficult to raise. We admit that there are breeders who raise them (and lose many also), but the chicks feather very rapidly, and require care that is not usually bestowed. Like some Games that are hardy when matured they are as delicate as young turkeys. The Dorkings we used were brought from England by Captain Sargeant.

THE TEMPERATURE.

A reader at Fairport, Mo., asks several questions in regard to temperature, which may be of interest to others, and which we present below. He says:

1. To how low a temperature may an egg be subjected without destroying its fertility?
2. How may one know when the fertility of an egg is destroyed by being chilled?
3. How long may eggs be kept with safety for hatching purposes?
4. At what temperature should eggs be kept while laid away for hatching purposes?

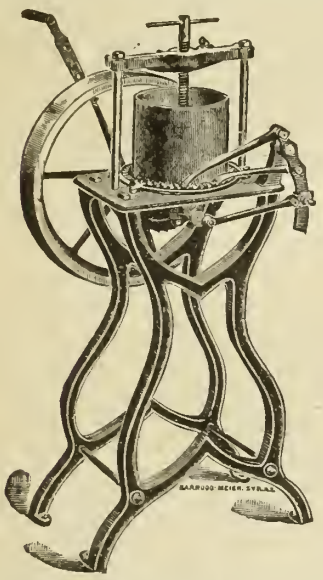
The temperature for destroying fertility is anything below the freezing point. There is no mode of determining the fact of the destruction of the fertility of an egg before it has been used under a hen. Often an egg will crack when it becomes frozen. Eggs can be kept at a temperature not lower than forty degrees and not above sixty. If turned half over three times a week they will hatch after being kept six weeks, as we have tried the experiment and know such to be a fact.

THE WEBSTER AND HANNUM CUTTER.

The Webster and Hannum green bone cutter, made by Messrs, Webster and Hannum, Cazenovia, N. Y., has met with a a large sale, and is well known to poultrymen. They are all ready for power or by hand, and cuts very fine for chicks or as coarse for fowls as may be preferred. Each cutter is warranted for one year. It has an automatic feed which is instantly changed, and broken parts are exchanged free of cost should they break during that time. The cutter is best described by them, as follows:

In this machine we have been at great expense, both of time and money, to produce a machine that would be *practical*, do good work and a variety of work, and still be so cheap in price that practical people with only a small number of fowls should find it pays them best to have one. All this we have done, and do not hesitate to say that we have the *best* and most *practical* machine in the market. We have been careful to make our machine strong where strength was required, and to dispense with the incumbrance of unnecessary weight where it was not needed. The bones do not first have to be broken fine by hand, as is the case with some other machines. Our machine will readily take in a bone 4x6½ inches. Our machines are fitted all ready to run either by hand or power.

A very practical feature of our machine is our new improved chilled steel cutter-head, which is made of a peculiar hardness and strength by a process of our own, and



THE WEBSTER & HANNUM GREEN BONE CUTTER. MADE BY WEBSTER & HANNUM, CVAENOVIA, N. Y.

which will effectually cut the hardest bone, gristle and meat, rendering all very fine and much more valuable than the coarse bone turned out by some other machines, because being fine it is much more perfectly digested and assimilated.

There is also another serious objection to feeding bone that is coarsely cut; it is liable to lodge in the crop, causing the bird to become *crop bound*. Never has an instance of this kind been reported in feeding bone cut with our machine, but numerous instances are reported of fowls getting fatally crop bound when the coarse cut bone from other machines has been used, especially when the bone has been cut into long coarse shavings. On this we can refer to several instances if desired.

One especial point of merit with our machine is the fineness of the bone cut, as most of the substance of a hard bone is rendered *very* fine, like meal or even salve, one pound of which we claim is of more value to fowls than two or three times the amount of coarse cut bone, a quarter of an inch square and larger, such as is turned out by some other bone cutters on the market.

It requires more labor to cut a cord of wood twice in two than it does to cut it once. This principle is true of cutting bone, and we do not claim that our machine will cut a pound of bone *very fine* in the same time that some other machines will cut a pound of bone into coarse *chunks* which are not near as valuable for fowls as the very fine bone. But our machine will cut a bone *very fine* as rapidly and as easily, at least, as any other machine can do if cut as fine. Our hopper holds full two and one-half pounds of green bone. This is usually cut out by hand in ten or fifteen minutes, and is sufficient to feed from forty to eighty hens for one day, depending on the size and breed When run by power it will cut four or five times as fast, and there is no necessity for stopping the machine to refill the hopper. We do not waste the bone by cutting it up into coarse chunks, as in the case with other machines, the manufacturers of which say in their directions for using "overlook a few pieces too large for the hens to eat." And again, "do not mind a few large pieces which are left in the cut bone."

By the peculiar construction of our cutter it clears itself perfectly, and we guarantee it not to clog. We have also used adjustable steel knives for cutting bone, but have found them to dull quicker and much more liable to break, or some of the numerous parts to get out of order than this, our improved chilled steel cutter. Being solid throughout there are no screws to get loose or lost, no knives to watch to see that they do not get loose or out of adjustment, and so not cut at all. In our new chilled cutter all these things are done away with and we have a *solid cutter*, the peculiar shape of which enables us to cut any bone very finely, also to crack or cut corn as nicely as any *mill* will do it, or crumble bread splendidly for small chicks, or will also cut *clear meat*, which other machines will not do unless the meat is first frozen (so say the makers), a preparation which might be unhandy during some parts of the year. It is well known that chilled mould board plows will stand more wear in sharp, gravelly soil than steel mould boards. This we have discovered is true of steel knives for cutting bone, for our chilled cutters stand more wear without dulling, and may be sharpened several times by grinding, as the chill is on the cutting face.

At last, when the cutter is worn down too small to do good work, we can furnish a new cutter for fifty cents, which is less than a competent machinist would usually ask for *only one* sharpening and properly adjusting the loose steel knives of any other cutter.

Our mill successfully cuts the hardest, toughest green bones as they come from the butcher, cutting bone, meat or gristle readily by hand or power, rendering the bones fine as sausage meat. Is equally valuable in cutting vegetables, cracking corn, etc. A feature of great practical value is our automatic feed, which is quickly changed from slow feed for cutting bone to rapid feed for cutting vegetables. By means of this our mill not only feeds itself, but the operator is at full liberty to use *either his right hand or his left* to turn the machine, and when one hand becomes weary with turning, change and turn with the other. This is an advantage which can hardly be appreciated until put into actual test and is an advantage which no other Bone Cutter in the market possesses; but all others are so constructed that the left hand must be constantly used to regulate the feeding arrangement and all the *work must be done with the right hand* Even when this right hand becomes tired there can be no changing of hands even for a moment on account of the construction of such a machine; but with our machine *either hand* can be used at pleasure. This feature also renders our machine vastly superior in actual operation to any other.

Our follower is instantly removed, when it is necessary to refill the hopper, by means of opening our hinged or split nut, which does away with the tiresome job of running the follower out on the screw, thereby saving a great amount of time and labor. This feature is so valuable that since we have put our machine on the market some other manufacturers of Bone Cutters have adopted our improvements on *their* machines, with never so much as "by your leave." But *we hereby give notice that all Bone Cutters having a split or hinge nut for removing the follower*, together with a hopper for holding the bones and cutters at the bottom, *are infringements* on our re-issued patent, No. 11298, and all persons who use as well as those who make or sell said improvements are liable in the U. S. courts for such infringements.

Now we do not want to be quarrelsome or unfair, but we have to protect our fowls from marauders and our improvements also You, dear reader, would do the same thing and say with us, *all infringements will be prosecuted.* But avoid all trouble by buying direct from us, who alone have the lawful right to make and sell these improvements.

We crate our mills so that the freight charges are very light, going at second-class rates, thirty cents usually paying the freight for several hundred miles. In this way we save hundreds of dollars to our customers in freight charges.

We also furnish free any parts which break by fair usage during one year.

It has been abundantly demonstrated that green bone cut fine is fully as valuable for growing chicks as for laying hens. And we think it is conceded that green bone is unequalled in value and cheapness for egg production. Another advantage in using the green cut bone is the *saving of other food.* After repeated trials it has been found that at least *one-third* of the grain bill is saved by the use of the green cut bone.

As our Bone Cutter possesses so much merit we are very willing to send it on its merits to be tested fairly and thoroughly for two weeks. You will find the machine to do excellent work and even within that time a decided increase of eggs, when used faithfully and the bone fed at the rate of from half an ounce to one ounce per hen each day. If, however, after testing our machine for two weeks, you do not, in your opinion, find the machine to do all and be all we here represent, or should you not think the green cut bone as valuable as we describe it to be, you shall be at full liberty to return the machine to us, you to pay all transportation charges, both ways, and to assume damages from breakage should any occur on the way.

We make the above offer in the utmost good faith, but you will see on reflection that we should be protected to a reasonable degree.

We sell our machines very low, at a small advance above the cost of manufacture, so that it would not pay us to be to the trouble to investigate every applicant all over the country to see whether he was responsible and a proper person to trust, and without some precaution of this kind you will see it would be likely to bankrupt any firm to send out goods on trial—otherwise every irresponsible or dishonorable person could send, and be so much ahead. So we think it but fair and proper to say: "Send us the price of the machine." We are perfectly responsible and trustworthy, as you will see by the annexed statement. We will ship you at once one of our improved machines, in such way as you direct, and after giving it a fair trial for two weeks you will be at full liberty to return the machine to us, if you do not find it to accomplish all we represent. As soon as the machine reaches us, and transportaion charges paid, we will at once return to you the money. There will be no delay with us in doing all this just as we here agree.

Now could any one propose anything more fair than this? Were we to exchange places, would you do more? You risk nothing in this way in testing one of the most valuable of modern improvements in poultry keeping. And we make this proposition with the fullest confidence that after once testing our machine you would not part with it.

We have made the price *very low*, and can give no discount. *We do not send machines C. O. D.* In ordering write plainly. Give full shipping directions. Remit by draft, express money order or post-office order. *Do not send personal checks.*

They make three sizes, and have taken premiums at many of the leading poultry shows and agricultural fairs. They also sell green bone, ready cut, that will keep a year, and also prepare ground limestone. The first clover cutter ever placed on the market, for the exclusive use of poultrymen, was made by them.

SOMETHING LEFT OUT.

A subscriber at Algiers, Indiana, leaves us to "guess" something because be only sent one-half of the facts, which many are guilty of. The following is his letter.

Last spring I started into the poultry business on a small scale. I started with fourteen hens and had fair success in raising chicks. I have something near 100 pullets and old hens together. A great many of the pullets are five and six months old. and have never deposited any eggs yet. Two or three weeks ago something got the matter with two or three of them, and they drooped, a few days and died. I looked through your paper and concluded I was feeding too much wheat, so I quit feeding them entirely. They seemed to do very well till some few days since, and now others are drooping and dying the same way. They will draw their necks down into their body, and stand with their wings slightly drooped, and do not want to move around any. The droppings are mixed with green and yellow, are thin, and when one dies its head is drawn down till its bill will rest on its crop. I do not think it is lice, as I am very careful to keep the house clean, and never see any on the roosts. Will you, (if you can) give me some information and remedy. When I dissected one I found its lungs of a bright pink color, its liver was of a dark red, and could be easily mashed when taken between the thumb and fingers, otherwise all looked to be healthy. They first get pale around the comb and then refuse to eat, then they do not last but one or two days.

Nothing about how he feeds or manages. He states what occurs so far as the symptoms are concerned, but we must *guess* what he does to cause these things. The soft liver indicates over-feeding and perhaps the use of some kind of condition powder that contains copperas or antimony, the mineral poison causing the crooked necks, from pain, being affected mostly during damp weather.

HARBORING VERMIN.

Rats, minks, mice and other vermin will readily accept all invitations to abide with you. They must have secure retreats, and if you provide them, they will be occupied. Remedies are useless unless they can be applied. Wherever there exists a pile of lumber or logs, or debris of any kind, the rat will be sure to put in an appearance. He can burrow into the ground, and delights in getting under a floor, from which he will make nocturnal raids on the chicks. He can go where the cat and terrier cannot reach him, and the best way to get rid of him is to give him as few harboring places as possible.

HOW TO DRESS AND SHIP POULTRY.

Poultry should be kept without food twenty-four hours before killing; full crops injure the appearance and are liable to sour, and when this occurs, correspondingly lower prices must be accepted than obtainable for choice stock. Never kill poultry by wringing their neck. The demands of various markets vary a little, and in preparing poultry for market the custom of the market to which one is to ship should be followed.

To Dress Chickens for the Chicago Market.—Kill by bleeding in the mouth or opening the veins of the neck; hang by the feet until properly bled. This is best done as recommended in directions for dressing capons. Leave head and feet on and do not remove intestines nor crop. Scalded chickens sell best to home trade, and dry picked best to shippers, so that either manner of dressing will do if properly done. For scalding chickens the water should be as near the boiling point as possible, without boiling; pick the legs dry before scalding; hold the fowl by the head and legs and immerse and lift up and down three times (if the head is immersed it turns the color of the comb and gives the eyes a shrunken appearance, which leads buyers to think the fowl has been sick); the feathers and pin feathers should then be removed immediately, very cleanly and without breaking the skin; then "plump" by dipping ten seconds in water, nearly or quite boiling hot, then immediately into cold water; hang in a cool place until the animal heat is entirely out of the body. To dry pick chickens properly, the work should be done while the chickens are bleeding; do not wait and let the bodies get cold. Dry picking is much more easily done while the bodies are warm. Be careful and do not break and tear the skin.

To Dress Turkeys.—Observe the same directions as are given for preparing chickens, but always dry pick. Dressed turkeys, when dry picked, always sell best and command better prices than scalded lots, as the appearance is brighter and more attractive. Endeavor to market all old and heavy gobblers before January 1, as after the holidays the demand is for small fat hen turkeys only, old toms being sold at a discount to canners.

Ducks and Geese—Should be scalded in water of the temperature as for other kinds of poultry, but it requires more time for the water to penetrate and loosen the feathers. Some parties advise after scalding, to wrap them in a blanket for the purpose of steaming, but they must not be left in this condition long enough to cook the flesh. Do not undertake to dry pick geese and ducks just before killing for the sake of saving the feathers, as it causes the skin to be very much inflamed, and is a great injury to the sale. Do not pick the feathers off the head; leave the feathers on for two or three inches on the neck. Do not singe the bodies to remove down or hair, as the heat from the flames will give them an oily, and unsightly appearance. After they are picked clean they should be held in scalding water about ten seconds for the purpose of plumping, and then rinsed off in clean cold water. Fat, heavy stock is always preferred.

Before packing and shipping, poultry should be thoroughly dry and cold, but not frozen; the animal heat should be entirely out of the body; pack snugly in boxes or barrels; boxes holding 100 to 200 pounds are preferable; straighten out the body and legs, so that they will not arrive very much bent and twisted out of shape; fill the packages as full as possible to prevent moving about on the way; barrels answer batter for chickens and ducks than for turkeys or geese; when convenient, avoid putting more than one kind in a package; mark kind and weight of each description on the package and mark shipping directions plainly on the cover.

FILTHY POULTRY-YARDS.

As there is danger from Asiatic cholera in this country, and the advice has been given to all to allow no filth to accumulate, one of the first duties is to purify the poultry-yards. No poultry should be allowed to scatter their droppings in the yards around the dwelling house or in the barns, but should have some inclosed space upon which they should remain, and such space should be kept clean.

It is not difficult to keep the floor of a poultry-house clean, but the yards entail more labor than many are willing to bestow. Plough or spade the yards so as to turn all filth under Bear in mind that wherever you notice flies congregating your attention is demanded at once. A cheap disinfecting solution may be made by dissolving one pound each of copperas and bluestone in six gallons of water, and sprinkling or spraying the solution wherever it can be applied. Under no condition should any kind of filth be allowed without disinfection.

POULTRY AND PORK.

The cost of the production of pork is less than that of the cost of poultry, but the prices of poultry are higher. The keeping of a flock of hens, however, is not for the production of meat only, as a hen may lay ten dozens of eggs before she is sent to market. There is no conflict between the hog and the fowl Both have their uses on the farm, and as far as the matter of profit is concerned, the hen can compare favorably with any of the animals.

THE CATSKILL FAIR—THIS AND THAT.

MRS. S. RIDER, MARYLAND. N. Y.

Your correspondent recently attended the Catskill, N. Y., Fair, which was a success in more than one respect. and not the least was the poultry department. The poultry building was quite a large one, and well filled with poultry, pigeons, etc., including a cat and kittens, which caused some merriment. There were some fine birds on exhibition, among the number several pens of Buff Cochins, also American Dominiques, Black and White Plym-Rocks, White Wyandottes, Leghorns, Red Pyle Games. Bantams, etc. One pen of Golden Seabright Bantams were especially cute, as they were so very tame. We wish we knew the owner, as we would like to own them. They were beauties. My "other half" says I am "all hen," and although I am not willing to admit quite so much, still my brain turns very easily in that direction. We expect to winter about 100 hens, and have just bought a fine pen of Barred Plymouth Rocks, and hope to have eggs and stock for sale next year. As for yellow legs, I think I never saw deeper colored ones. I think we shall try a bone mill for winter use, hoping to make our hens pay better than they did last winter. Our buildings are warm. The largest one is sided up, papered, and then clap-boarded over, making it quite warm. It also has a board floor, very tight, but how to keep it from being damp in winter we have not yet found out. Can some one tell us? [Keep leaves or cut straw on the floor—ED.] Our buildings are usually cleaned once a week, using saw-dust, lime or road dust under the perches. Our roosts are eighteen or twenty inches from the floor, which I think about right. Sitters that we wish to break up we usually put in a yard by themselves, but find sometimes it is less trouble to move the nests in which they wish to set to another place. If they are a little particular this will sometimes break them up. If my nests were not movable I would shut them off a day or two. Experience teaches us a great deal. I have some fine White Wyandotte hens, so judges tell me, and am thinking to get a cockerel to mate with them, having lost my old bird. We like screen doors for summer, taking down or fastening open the other doors. We like best, where we can, to leave the other doors in place, for then, if the weather is cold or windy, the screen doors cause a draft, and we can leave them open and close the others. We also use coarse woven wire for the windows, which works well when the windows are open or shut. I think where one has a large number of hens, say not more than a hundred, it pays to send them to a city, if they are gathered daily and sent in good shape. For us the Albany market is a good one. Think we shall ship more eggs for the year to come. Success to the POULTRY KEEPER.

FEEDING—DESTROYING LICE.

(NO ADDRESS.)

I should like to add another mite to the already full "POULTRY KEEPER. I stated in the April number that I fed all the corn at night that my hens would eat, but I find that it does not do to feed Leghorns the same as Plymouth Rocks. The Plymouth Rocks get too fat on corn. Most of the farmers here keep all kinds of breeds mixed up, and I find that by watching the results of feeding and care they are very different. Many people here have corn piled upon the ground where their hens can get all they want, and then wonder why they do not get any eggs. I am surprised many times, as I go around the neighborhood, telling of the POULTRY KEEPER, at the questions some people ask. Now I do not know very much about poultry and the more I read the less I think I know, but I have found out a few things by experience. Now about these little gray mites, that seem to swarm in this part of the country this spring. I went to my hen-house one night, just about dark, and saw one of my setting hens standing up in her nest. I thought something must be wrong. I took out one egg and it was black with mites. I was surprised, for I had cleaned out my hen-house and swept it out clean every day, and had not seen a mite before, but here they were thick. Well I had some "Death to Lice," and I thought I would try it. I supposed the hen would be dead in the morning, but I sprinkled some of the powder on the eggs, and put a little on the hen, and left her until it would become light in the morning, but when I went there in the morning, expecting to find my hen dead, what was my surprise to find her sitting there alive and content, the little chicks hatched out, and the mites still thick in the nest, but all dead. After that I took the roosts all out and washed them in a pan of coal oil, and dipped the broom in the oil as well, and swept the house out, sides, roof and all. Then I procured some lime, and mixed a little carbolic acid in the air-slacked lime, put the lime in an old coffee sack. and shook it all over the inside of the house, floor, roosts and all. I kept this up every day until I cleared them out, and then I burned all the cleanings of the house also. I turned my small coops over every day or two, and looked for the mites all around the sides. Some of my neighbors shut their hens out of their houses, and made them roost in trees, but I think any person can keep the insects down if they look for them early and not let them get the start. I have tried lard and carbolic acid for head lice, about ten drops of acid to a pint of lard. Put some on the back of the neck, as the lice work low down the neck as well as on the top of the head. If I find them very bad on some hens I grease a ring all around the neck, and for the body lice I have a dust box. I got road dust and sprinkled "Death to Lice" in it, and they roll and scratch in this and clean themselves of body lice. If a person wants nice hens they must remember this much—always look for lice, supply grit (broken dishes), clean water, clean houses, and clean yards.

AN OPINION ON CORN.

HENRY S. LAISTER, SNOHOMISH, WASH.

Will give my opinion of corn. I am now fifty-four years of age, and am a lover of fowls, have made them a study since I was fourteen years old, and have observed how others treated their fowls. One farmer in New York State fed corn, and everybody else did the same; consequently no eggs in winter, but one cold morning during the latter part of February, this farmer went out to the corn stable and found one of his cows with a calf behind her, a month earlier than he expected, and being too stingy to live as he ought, he killed the calf after the third milking, took off the hide and threw the carcass to the hens. There were fifty of them, and in less than ten days the eggs came four dozen a day (twenty-five cents per dozen), and they kept coming until warm weather. Then they got insects and corn, and layed as they did other seasons. This episode in chicken culture has always remained in my mind, and I practice it with my fowls, with assured success. Now a word about filling the walls of a hen-house with saw-dust. Don't do it. This same farmer kept his hens in his barnyard all through seeding time, and until garden stuff was well ahead. Then he turned them loose while his brother's widow kept her hens and chicks in the wood-yard, where there was plenty of chips and saw-dust; consequently her stock was so lousey that she had to skin the fowls that were dressed to eat, while the farmer's hens were as healthy as they could be. I have a hen-house, the walls of which are filled with dirt. I expect to build a larger one and will make it tight enough to fumigate occasionally with sulphur to keep free from lice. Now I oil or grease their heads and under their wings, and dust them with Scotch snuff or sulphur, and their nests, too.

NON-SITTERS.

O. H. DELUCE, WHEATON, ILL.

During this last season I had a thoroughbred S S Hamburg become broody. After trying in vain to *break her up*, I gave her twelve eggs and she brought off ten nice chicks. She was a most devoted mother but very quarrelsome with other fowls. Her coop and hurdle was quite near one in which a very large Light Brahma had a brood of little ones of the same age as hers. By chance the S. S. Hamburg had been given the largest and best house. One day the hurdles of both were left open that the mothers might forage with their chicks. When the time to go in came, Mrs. Brahma decided that she would try the larger and better house. Dainty Lady Hamburg was there, and said very decicedly, "no you don't." She was so much in earnest that if I had not taken the matter in hand Mrs. Brahma would have no doubt been killed.

They were both kept in their hurdles for awhile after that, but in a few days they were again allowed to go out. When the time to go back home came Mrs. Brahma again went into the Hamburg's hurdle but instead of trying to go into the house with her chicks she stayed outside with her brood, while the Hamburg took the inside. After this I let them go out as they pleased and they were the best of friends. The Brahmas always stayed at night in the other's hurdle and the spunky mother kept the inside of the house for herself and family, but before that she had deliberately killed one or two of the other's chicks that had gotten through the hurdle wires. In course of time the Brahma died and the Hamburg adopted the orphans and raised them with her own.

I have seen this same Hamburg kill two half grown rats. Once after taking away some eggs which she wanted to set upon and returning to her pen, she flew at me so savagely that if the wires had not been between us she would no doubt have tried hard to punish me. I cannot help thinking that little Mrs. Hamburg is a pretty wise hen. About the same time as the above I had a half breed S. S. Hamburg and White Leghorn hen make up her mind that she must hatch out a family. It was no use trying to change her mind, for set she would and set she did, coming off with a good hatch. After she had been in her outside home for a week or two I let her roam with her babies and she immediately selected a foraging ground as far away as possible from all of the others, coming up at night always to her house. She kept her brood till some were larger than herself, but could always be found at the extreme part of the farm. My experience has been on more than these occasions that if a Leghorn or Hamburg becomes in dead earnest there is no use to try to say "no" to them.

KILLING THE LICE.

E. W. BROWN, OLD MYSTIC, CT.

Having seen several articles and items of inquiries on "Hatching" and "Insect Powder," I thought I would try to give a little light on the subjects from actual experience. I always use plenty of insect powder around where I hatch my chickens In the first place, I make my nests, and get everything in shape so as the hen will be comfortable. If in warm weather, select a cool, moist place; and if in cold weather, a warm, sheltered place. Then I take the hen by the legs, holding her head down, and fill her feathers full of insect powder, and also fill the nest, and put her on the nest with two or three eggs (nest eggs); then, if 'Biddy' sets all right for a day or two, I take my eggs, eleven or thirteen, place them under her, and sprinkle plenty of insect powder over the eggs, and so 'Biddy' goes free from lice and remains until the day before she hatches. I give her another dusting in her feathers, and the little fellows come out and are spry and happy, as there are no lice to annoy them. It is my experience that two-thirds of the chickens hatched by hens die from lice. I will give my experience of a hatch I made last season. I set two hens on twenty-six eggs and got twenty-four chicks, the other two eggs being infertile. I raised twenty-three of them to maturity. This is only one instance, but we could tell of several like hatches. I use death to lice powder and find it good. If any one wants any further information, will answer all inquiries which have stamps enclosed.

Mortimer's "Death to Lice" will destroy them.—ED.

A SUCCESSFUL POULTRY FARM.

O. T. BOOTH, CHARLEVOIX, MICH.

I have a ranch twenty-four by two hundred, with a four foot alley-way through the centre, with water every seventy-five feet the entire length. Feed room is sixteen by twenty-four feet, supplied with all needed conveniences. First 100 feet is on south side from west end, and is arranged as a hot water brooder, with a Bramhall & Deane Heater, and over that, on the west end, also is the nursery, two and one-half by twelve feet, in which the young birds are put after leaving the incubator until put below and fed. The building is first-class. We have two incubators, one Monarch, holding 600 eggs, and another hatcher, which holds 720 eggs, connected with a farm of 120 acres. I have two other farms, making a total of 200 acres. Spring birds sell from twenty to twenty-five cents per pound. Demand unlimited (home market). Old birds sell at fifteen cents per pound, and I never sold a pound for less. Eggs will average twenty-three cents the year around. I want a partner with a small capital, or will sell or rent. The only reason is old age and poor health.

HOW TO RAISE CHICKS.

A. B. SHAUB, CANTON, OHIO.

Having read "F. W. T's" letter, in the November issue of the POULTRY KEEPER, it has prompted me to write a letter which may be the means of helping him out of his trouble, as well as many others. I have had the same trouble with raising chicks. My idea is that it is very easy to hatch chicks, and the hatching, as a rule, is the easiest part of the poultry business. How to raise them, and how to make the hens lay, is the important part of the industry. It would take too much space for me to do, like Deacon Jones (tell my experience), but I will give you my conclusions how to raise chicks in cold weather, and you can take them for what they are worth,

After the chicks are hatched, and perfectly dry, put them into a brooder, which is heated to 90 to 100 degrees. Do not feed them until they are twenty-four hours old. and it won't hurt them if they are thirty-six hours old; they will not starve. Then give them a few crumbs of a cake made as follows: one-third corn meal, one-third oat meal, and one-third farina or middlings, well baked in a slow oven; give them a variety of feed and not too much at once, feed often. Give water in such a way that they cannot get their feet or bodies wet. Never feed them inside the brooder; always feed them in the yard. If it is so cold that they will not readily come out into the yard to eat, take them in your hand, one at a time, and protect them from the cold, but always making them eat in the yard. By this method they learn, by the time they are two or three days old, that they must go outside to eat and drink, and they won't starve, no matter how cold. I have seen them go out when they were two days old and the thermometer registered fifteen degrees below zero. Certainly they cannot stand it long, but they know where it is warm and it gives them the very best kind of exercise, which they should have, to do well and keep their blood in good circulation; then they get used to the cold from the start, and also to the ground, as a brooder should always set on the ground and out doors, excepting in very severe weather, when it may set in a shed with the south side open. As I said before, give them a variety of feed, and plenty of cut bone, and as they grow older, get them used, by degrees, to do with less heat, so that by the time they are from nine to ten weeks old you have the heat shut off entirely. Leave them in the brooder several nights after you have shut off the heat, and you can change them to the poultry house, and the change will not hurt them. Most incubator and brooder manufacturers treat the brooder as a secondary concern. I consider it as the all important part of the business, for if you have no good brooder, a good incubator is of little consequence. I raised successfully about 500 chicks last winter and spring, and in the coldest weather the loss was few. I am now raising them and expect to hatch the year around. In a nut-shell my plan is this: Get the chicks used to the ground and cold from the start, by compelling them to go there for their food, always having free access to a good, warm brooder when they are cold. Give them a variety of food, keep everything clean, and the fatalities, discouragements, and failures will be reduced to a very small per cent.

IS IT SCROFULA?

S. J. HOUGHTON, BRINKLEY, ARK.

Every one has a remedy, but please speak "one at a time," I have a fine lot of Plymouth Rock chicks, and within the past ten days I have pulled the heads off of a number and thrown them into the neighbors' back yards. First, I notice something like a wart on the beak, or corner of the mouth. It grows rapidly, and within a few days the formation becomes annoying while the hens are eating, which they continue to do with usual eagerness, and in fact to a deformity. The disease continues to spread until the eye and mouth are involved. Upon examination after death I found that half the under jaw of one was in a state of decay. As fast as I kill one it seems that another develops the disease. I never saw anything just like it, and will be greatly obliged to the one who tells me what it is and what to do. The chicks have clean and warm quarters, and I am confident that they are free from lice. They are an exceedingly jolly lot, and though thus afflicted seem to be all O. K. otherwise.

[Those diseases usually exist in the South—never at the North. We are unable to state what it is without an observation, but the symptoms point to some scrofulous characteristic, either inherited, or transmitted by contact. We suggest total destruction of the flock, thorough disinfection, and begin with others.—ED.]

SHE KEEPS UP THE WORK.

F. S. MORGAN, CADY'S FALLS, VT.

I have a hen, bought from a gentleman who brought it from Canada. I have never seen one like her, and would like very much to know what she is, and where I can procure her kind. Small height, two and one-half pounds weight, light and very active, entirely different from any I have ever handled; small pink legs and feet, plumage white, except on neck and head is tinged yellow; heavy double comb and large heavy muffle over throat and ears, with slight top-knot on head above her comb; short, stubby tail and shorter wings than on other fowls. Would like someone to name her for the reason that I paid forty-five cents for her last April. She was laying when I got her. She has positively, and on careful watching, lost less than one week's time since April 15th, and is laying now. She is a ragged, homely thing, bob-tailed and moulting, but still her melodious little cackle sings out every day, and we find a medium size, pearly white egg in the "Kannucks" nest. I would like to have more like her, but the person from whom I obtained her could not enlighten me. I think the POULTRY KEEPER is at the head of poultry journals. It has saved me many times its cost and given me great pleasure in its reading. [She is probably a cross from a White Polish.]

A SCIENTIFIC EGG FOOD.

Take the lowest grade of chaff of corn or wheat, and add skimmed milk to it; then, in order to get more of the element of lime in it, take some powdered oyster shells mixed with molasses, making a saccharate of lime, and put that in; then slowly simmer or bake into a bread. You will then have a cheap food of nutrient properties. Now, by scientific analysis, it is ascertained that the most nutritious elements necessary for hen food are found right here in this mash or bread.—*Southern Fancier.*

This is the receipe of Edward Atkinson, the Boston scientist, which he claims is the best and cheapest of egg foods. We give it for what it is worth, and we presume it is worth a good deal, even though it does hit rather hard at scientist Jacob's theory that oyster shells are of no value to the hen in manufacturing eggs.—*Fanciers' Monthly.*

It is *cheering* to "slowly simmer" a lot of food, or bake it into bread. *Any* kind of food will be more digestible if "slowly simmered." The above is molasses *cake.* The oyster shells are about as useful as sand. The compound does *not* form "saccharate of lime,' because the oyster shells, being an insoluble salt (*carbonate* of lime), will not form a new compound with another *carbon* compound (molasses). What the *learned* savant means is *lime* (not *carbonate* of lime), and it is not necessary to resort to the use of molasses to use it, nor stand over a hot fire to "slowly simmer" it. Next, Brother Harker.

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Marked the Whole Paper.—Sample copies of your valuable paper should call forth the very small price of subscription. Among others, November number is a gem and should clothe act. While I have never used an incubator, I would like to make one after your plans, which are so much praised. I desire to use Leghorns exclusively, wanting eggs mainly, and having a sixty five acre range, and they won't sit often. It is my practice to mark good things in papers, of reference, that I read, but was compelled to quit the habit with the POULTRY KEEPER or mark the whole paper. Best wishes and let the good work go on.—*John B Hyman, Washington, D. C.*

Egg-Eating Hens.—I have noticed in several issues of your paper a request for a cure for egg-eating hens, and I will give one which has never failed with me. I have succeeded in curing ten hens. When I find a hen eating her eggs I take an iron, and heat it to a red heat, hold the hen between my knees, and place the hot iron to the tip end of her beak, just an instant, so as to burn off the point of the beak, holding the head securely with the left hand.—*Jacob L. Weber, Chicago, Ill.*

Be a Little More Particular.—I very much enjoy the POULTRY KEEPER and have been especially interested in Mr. Kinney's statement. But it lacked details for some to fully understand his methods; and I am also interested in the articles on incubation, moisture, etc Permit me to suggest that you urge correspondents, in making statements of eggs received from hens, to add more detail to their methods of feeding, giving ages of pullets or hens. And when they make a report that they have fed in such and such a manner, add to it how much they feed, and what number of fowls, and how often they feed. I perceive there is a great lack of these minor details in a large portion of the letters printed. Those little matters are what we most like to have noted.—*A Subscriber.* [An excellent suggestion.—ED]

Cold Ashes and Lice.—I am receiving much benefit from the experiences of others, and so I will venture to give my experience in keeping clear of hen lice during the past year. I keep about fifty hens in one flock. I clean the floor and roosts twice a week during warm weather, and once a week during cold weather, using a hoe and shovel only, and immediately dust the roosts and floor with coal ashes freely. I keep my coal screen hanging up in the hen house for convenience. What coal ashes are not needed in the winter can be kept for summer, and I have no hen lice about my poultry house. I hope this may help some body who is troubled with lice.—*J. Knapp, Prattsburg, N. Y.*

An Excellent Poultry House.—Last winter I built a poultry house, twelve feet wide and one hundred and twenty feet long, ten feet front and seven feet back. It is shingled, boarded and clap-boarded with waterproof paper between. It is divided into twelve pens and a basement with five pens, which make seventeen in all, with full-size windows, all ground floor, excepting over the five basement pens. For the partitions it is boarded three feet, with wire three feet above that, the doors being made to hang on spring hinges, so that there are no doors to close and fasten. It has a yard of two acres, with tight board fence three feet with three feet wire above that all around. There is also a small stream of water that runs through the yard. I expect to winter 200 hens and some pullets. I have Black and Brown Leghorns, full blooded, and one pen of Brahmas. I bought and used an incubator, with which I had very good luck. —*A. W. Johnson, Whitefield, N. H.*

A Single Number Paid —Thanks for sample copy of your POULTRY KEEPER. One item saved my last sick turkeys. "Feeding Linseed Meal." I had no linseed meal, but found about a tablespoonful, soaked it over night, thickened with flour, baked, and fed to them The young turkeys ate, but the old ones did not. I took bread, turned on linseed oil, and fed that. The young turkey got well and the old one we killed.—*Mrs. J. J. Randall, Randall, Wis.*

Plymouth Rocks as Layers.—How is this for Barred Plymouth Rocks? This is the 20th of September, and I have six Plymouth Rock chicks out of eight eggs, that were layed by a pullet hatched in March. She began to lay early in August. Let us hear from some one else.—*J. R. W., Cynthiana, Ky.*

Keeping Accounts.—I am very much interested in poultry. We have about four or five hundred chickens, five houses, and a good yard for each house. I give soft feed in the morning and grain at night. I keep an account of every egg, also of the feed, and for the last five years I have always had a balance on the side of the hen.—*Phillip W. Fisher, Schnectady, N. Y.*

Good Hatches.—I thought I would write the POULTRY KEEPER a few lines as I have just made a hatch with the incubator. Out of 138 good eggs I have 120 chicks, eighteen being dead in the shell. It was through your paper that I bought the incubator and I am very much pleased with it. I am a subscriber to the POULTRY KEEPER and expect to be as long as I am in the poultry business. Last January I made a hatch out of eighty good eggs, brought out sixty chicks, and raised fifty-nine to broilers. I would like to know if you and the readers of your paper think this good hatching. Please let me know through the columns of the POULTRY KEEPER.—*Wm. H. Whitehead, New Brunswick, N. J.*—[It is doing well.—ED.]

Wyandottes.—I like your paper very much. In two years and eleven months there were just two days that I did not get an egg. I keep from ten to twenty-five Silver Wyandottes, and not a show bird in the flock. They are bred more for use than for show.—*Chas. Poor, Stoneham, Mass.*

A Record of Ten Hens.—I send you the record of my ten hens, from January 1st to October 1st, 1893, for nine months. In January they layed 131 eggs; February, 136; March, 192; April, 197; May, 141; June, 108; July, 115; August, 173; and September, 89, making a total of 1,282 eggs, or nearly 107 dozens, or over 120 eggs per hen. Out of the ten hens I set three, and now have seventeen pullets and ten hens. The cost for feed, up to October 1st, was $10.41. It shows that poultry pays if properly cared for.—*J. Pfeifer, New Britain, Ct.*

From Utah.—Most all poultry here this year are a little late; that is, the large breeds which had a very late spring, though most poultry looks well. There are a good many fanciers out here in Mr. Kinney's that are doing well and others going out. We put down a lot of eggs this season in fine salt, when they were ten cents a dozen, and sold them a few days ago at thirty-five cents a dozen and they were just as good as ever they were. With all the poultrymen do out here, at Thanksgiving and Christmas, there are hundreds of turkeys, ducks, geese, and chickens shipped in here, also small poultry all the time by the barrel, and also eggs, yet the farmers are all troubled with hard times. They cannot take time here to bother with such small things as chickens. They are great fruit raisers here in North Ogden, and gardening, and it looks as though a good flock of poultry would help them. I have a nice lot of young stock this fall and hope to increase my business next year and also think the POULTRY KEEPER a good help to all poultrymen if they would read it and put many items there in practice.—*Andrew Miller, North Ogden, Utah.*

From New Zealand.—I consider the POULTRY KEEPER the best of all papers, and enclose subscription for it and "Poultry for Profit." I have sent all my KEEPERS around to different breeders. I sent two to a Mr. Philips, of Auckland. My record at the last Auckland show was three first prizes and two seconds, eight birds shown in Golden and Silver Wyandottes. I have, in turn, kept upwards of a dozen or more of the leading breeds and I give the Golden and Silver-laced Wyandottes the pride of place for all round purposes.—*P. McDuff, Turua, Thames, Auckland, New Zealand.*

FEEDING USELESS BIRDS.

There is an enormous waste of food in keeping males and unprofitable hens. A good manager will endeavor to know what his hens are doing, and each individual should be observed, if possible, in order to be able to allow only the most profitable to remain. Males are of no use except when it is desired to hatch chicks, and as a flock consisting of one male and a dozen hens should produce all the chicks desired, it is a waste of food and labor to allow more males to remain than are necessary. Males that bring twenty cents a pound when four months old will sell for only seven cents a pound when fully matured, and any surplus number only occupies space in the poultry-house and on the roost that should be occupied by hens. Feeding grain to males is not only a useless expense, but it makes them fat, in which condition they injure the hens, many cases of lameness of the hens being due to their being on the runs with the males. A general culling out should be in order, as a reduction before the winter sets in will be an advantage.

CABBAGE FOR POULTRY.

Use the inferior cabbages for the hens, as they will serve as green food. It is not necessary to chop them; but simply place the entire cabbage, with the stalk, where the hens can help themselves. They will not eat too much, and the cabbages will serve as an agreeable change. Turnips and potatoes, cooked, may also be allowed.

TURKEYS FOR BREEDING.

Keep the two-year-old hens, and mate them with a yearling gobbler. The hens that proved good layers and mothers should be preferred rather than to select for size. It should be a point not to have the gobbler related to the hens if strong and vigorous young stock is expected.

COLD POULTRY HOUSES.

Up in Canada the winters are cold, and our readers in that section are naturally interested in warm poultry houses. A writer at St. Bayville, Province of Quebec, sends us the following:

"Will you tell me in your columns what is the degree of heat to be kept in a poultry house in the winter time, so that hens will lay? I have seen many plans of poultry houses, but suppose they would not do in this country where we often have twenty-eight and thirty degrees below zero. Would you advise the use of a stove? If you could answer these questions you would confer a favor"

A poultry house should not be colder than forty degrees above zero, if possible, nor higher than sixty degrees. It will not answer to have the hens too warm, as they will take cold. It must be remembered that but few poultry houses are lathed and plastered, hence they are subject to the winds, and for that reason no ventilation is necessary, as the cold air cannot be kept out. When the hens are on the roost their bodies create warmth, and aid in increasing the temperature some. Whether a stove should be used depends upon the climate and the kind of house. If the house is close and tight a stable lantern, hung up in the house, will be sufficient. Old newspapers may be pasted on the walls, and covered again with more paper, which will serve to keep the cold out. It is the top ventilator that causes the heat to escape Cracks and crevices also do harm. During the day the hens must be made to work, which will be an advantage in assisting to keep them warm.

VARIATIONS IN AN INCUBATOR.

A subscriber, Mr. O. B. Gordin, calls attention to the above matter, which we give below, and asks several questions in regard to the tank. He says:

In the last number of the POULTRY KEEPER, Mr. W. L. Hegedon, of Indianapolis, Ind., stated that he leaves the front end of the egg drawer empty on account of the heat being lower at that end. What is the cause, and is there any way to overcome it? I intend to make an incubator, and we cannot afford to lose that space if there is any way to help it. Will the tank heat any faster directly under the spout which receives the hot water? It seems to me that, if so, why not place the spout at the front end? I would like to hear from some one on the subject. I am a reader of the POULTRY KEEPER and consider it a valuable paper.

When hot water is used the heat is the same over every part, and it makes no difference where the spout may be placed. Heat rises, however, and will go to the highest point. All that is necessary is to have the incubator *level.* This can be easily done by placing a level on the top of the incubator, but by leveling the incubator by placing the level in the egg drawer. If the heat is too low at one end raise that end a little. A few days' experience will settle the matter.

SIT OR SET.

Boys and girls, look out that you do not get into the habit of using "set" for "sit" and "lay" for "lie." They are very common errors of speech, and when you once get into the habit of using them it is hard to break up, like all bad habits. *You* can "lie" down, but you must "lay" your coat down. You can "sit" down but you must "set" your hat down. You can "set" a hen but the hen must "sit" on the eggs. You "lie" down to day, you "lay" down yesterday, or you have "lain" down at some previous time. You "lay" your coat down to-day, you "laid it down" yesterday. The *Youth's Companion* puts it this way:

A man cannot set on a wash bench, but he could set the basin on it, and neither the basin nor the grammarians would object. He could sit on the dog's tail if he were willing, or he might set his foot on it. But if he should set on the aforesaid tail, or sit his foot there, the grammarians as well as the dog would howl. And yet the man might set the tail aside and then sit down, and be assailed neither by the dog nor by the grammarians.

SOURCES OF LICE.

Where do the lice come from, in the first place? This cannot be correctly answered, but when you buy hens you may then be bringing lice into the flock, and eggs used for hatching purposes, procured from elsewhere, should be well washed before they are placed in the nest. Filth is also conducive to the rapid multiplication of lice, as it permits them to hide beyond the reach of the remedies used for their destruction.

MEAT AND BONES.

Several questions on how to feed meat and bones are for us to answer, as they are important, and may have been overlooked. A reader at Castle Shannon, Pa., writes:

Is steamed lean meat equal to cut bones for making hens lay? I can get green bones, uncut, in small quantities, for half a cent per pound, and cut bones at two cents per pound, with steamed meat for one cent per pound. Which would be likely to give the best results? Would it be better to give a liberal allowance of bones or meat two or three times a week; or to feed it in smaller quantities daily? In feeding steamed meat daily about how much should each hen have to give the best results?

Steamed meat differs from bone. It is best to combine the two, allowing equal portions of both, hence one pound of cut bone and a pound of steamed meat will answer well, the cost for two pounds being only three cents. The proper way to feed it is to allow one pound to sixteen hens, once a day, which is an ounce per hen. If preferred, the meat may be fed one day and the bone the next. It is not necessary to mix the bone or meat with grain or other food.

NEW HOUSES ARE DAMP.

It may not be known that a new poultry house will be damp compared with an old one. Whether this is due to the boards not being well seasoned, or whether they attract and condense more moisture than old boards, is yet to be solved, but the fact remains. Mr. Jesse Varley, of Clear Cake, Minn., writes on the subject as follows:

I lately built a new poultry house, twelve by thirty-two feet, seven feet high on side, and five feet lower, six-inch studding, boarded and tar-papered on both sides of the studding, with double sash on all windows, and I now find that it is so damp inside as to be only fit for fish to live in. I have in the house some eighty fowls of the Brahma breed. It freezes in the house yet when the weather falls below zero. It is now over twenty degrees below. What can I do to dry the house. It stands on high, sandy, loam soil, entirely above the surface.

The best and cheapest mode of drying a poultry house, and also to raise the temperature, is to *hang up a stable lantern* in the house. It will give off enough heat to raise the temperature some, especially near the top, and the dry air will attract the moisture from the walls. Never fear for the foul air, for when a poultry house is very cold it means that there is plenty of air coming in.

THE LEGHORN FOWLS.

No breed of fowls is more popular than the Leghorn. It is not large in size, the male seldom exceeding seven pounds in weight when fully matured, and the female rarely reaching five pounds. The Leghorns are non-sitters, and if kept under favorable conditions will equal other breeds as winter layers, and they will probably produce as many eggs in spring and summer as any breed They are very hardy, and seem to be as free from disease as could be expected with poultry.

Among the characteristics of the Leghorn is the yellow skin, which is accompanied by yellow legs. They are active foragers, and can be kept on a range with but little expense. They will not thrive well under confinement, however, and they can fly over a high fence. The eggs are pure white in color, of average size, and when used for incubation, they hatch well. The pullets begin to lay when five months old, and are beautiful in plumage.

The Leghorns are divided into white, brown, black and dominique, the latter being but little in favor. Of late a buff variety has been introduced. There is no difference between them except in color, the browns being the more numerous and popular, however. There are also rose-comb browns and whites, which do not differ from the single-comb varieties other than in the shapes of their combs. So far as laying qualities are concerned the color gives no predominance, and the rose combs fully equal the single combs in that respect.

DRY DIRT ON THE FLOOR.

It will never be a hard job to clean out a poultry-house if the floor has been covered to the depth of an inch with dry dirt. Not only does the dirt absorb the moisture of the droppings, but prevents them from adhering to the floor when they are dry. An old broom is all that is necessary for cleaning out a poultry-house which has been sprinkled with dry dirt, but if the dirt has been omitted, much scraping will be required. Over the dirt, leaves or cut straw may be used, in which the hens can work and scratch, and but little odor can be noticed upon entering a poultry-house that has been cleaned in the manner mentioned.

ESPECIALLY FOR OUR READERS.

Mr. George Curtis, Onondaga, N. Y., gives a hint below, which is excellent, and if our readers will keep the matter in view at all times it will no doubt be of advantage. He says:

"I am a regular subscriber to the POULTRY KEEPER, have been for years, and consider it one of the best of poultry papers, and I subscribe for three others

There is one question that I would like to ask, which is this. In giving a formula for mixing food rations for fowls when you say 'one part,' do you mean by *weight* or *measure*? I asked this of one paper and they concluded that there was no difference, but I knew better. It makes quite a difference whether a ration is made up of equal parts by weights of ships, meal and oats, or whether they are equal parts by measure. I notice on page 114 an article on 'Bran and Middlings,' which looks like a good ration, and says by weight, but on page 128 is a short piece entitled, 'An Egg Ration,' which is to me quite a heavy feed. This says simply equal parts—by *weight* or *measure—which*—also quite a difference in amount to feed. In article No. 1 it says about 'half a pint to a pint to ten fowls" in article No. 2 'one quart to twelv; fowls.' The subject of food rations will never be settled, and I think a difference should always be made from small fowls and large ones in the quality or the rations."

As a rule, grain is usually given by measure, one part, or two parts, meaning so many pints or quarts, and unless "by weight" is mentioned the *parts* are accepted as measures. It does make a difference, however, in weight or measure and our readers should endeavor to express themselves in some manner as to the measure or weight, in order to give as much information as possible on the subject of foods.

A CURIOUS ADVERTISEMENT.

A breeder in New York State, in a contemporary, has a standing advertisement. We withhold his name, but, although he did not exhibit a single bird at the World's Fair, here is what he says:

"My strain is again victorious at World's Fair, Chicago, Ill., in competition with the grandest lot of B. Plymouth Rocks ever shown on any stage. The first prize cock, cockerel and hen are now in my yards. The record of my B. Plymouth Rocks at Philadelphia, New York, Charleston and Buffalo is well known. I can send you birds to win or birds to breed winners."

He says *his strain* won. Also, that the first prize birds are *in his yards*. How did it happen then that another man won? Were the birds *borrowed?* If not were they *bought?* If so, how did they get back to his yards? Did he buy them back again? Did the man at Chicago win with some other person's *strain?* The advertisement says so. It is rather curious for birds to go from a yard, win for some other man, and then get back to the same yard. Here is a chance for some one to explain. It is easy enough to exchange bills of sale, etc., but were the above birds bought or borrowed?

THE DUST BATH.

There is one thing about a dust bath and that is the fact that with its aid the hens rid themselves of lice, but the dust bath must be of dust, not sand or dirt containing lumps or small stones. The finer the material the more thoroughly the hens get it in among their feathers. Coal ashes sifted and then sifted with a flour sieve, answer as well as anything that can be used, and if well scattered and dusted over every part of the poultry house the lice will not remain. If the poultry house is kept clean, the hens will easily rid themselves of vermin. Keep the box of dust in a dry place, as it must never become damp and renew the dust frequently, to prevent lumping.

DUCK EGGS FOR HATCHING.

At any time after Christmas the ducks may begin to lay, especially the Pekins, and the eggs will be high in price, especially if the large incubator operators begin early. The early ducks are hatched in incubators, so as to have them in market by May. The duck house should have a board floor, the space on the floor being entirely clear except a few nests along the sides. These nests may be simply box partitions. The floor should be well covered with leaves or straw, and the water trough should be so arranged as to be protected as much as possible, in order to avoid freezing of the water. Allowing warm water as often during the day as can be conveniently done will be found of advantage.

BRAHMAS vs. LEGHORNS.

The following was written by Professor Cook, of Michigan Agricultural College, for the Detroit *Post and Tribune*:

For three years I kept the Brown Leghorn and Light Brahma. I paid a good price for my eggs in the endeavor to get the best strains of these two breeds. I gave to both kinds the same treatment, which was that recommended as best by the leading poultry books and journals. This included great cleanliness, a warm house in winter, with much sunshine and light, ample ventilation in summer, warm feed at least once daily in cold weather, as much variety as was possible to their food at all seasons, and fresh water always before them.

I found that the Brahmas were much superior to the Leghorns as winter layers. Their eggs are scarcer, and always command a high price. If we take the whole number of eggs in a year the Leghorns might excel by a little, but a very little. If we count by weight, then the Brahmas are ahead. If we judge by value of eggs when laid, then the Brahmas are decidedly ahead.

When we consider the eating qualities there is no comparison. The Leghorns are small and their flesh insipid. We cared nothing for them for the table. The Brahmas, on the other hand, weigh eight pounds and, though there is hardly enough white meat, their flesh is of excellent flavor.

The Leghorns are wild and intractable and the cockerels at three months from hatching must be taken away from the hens. The hens are non-sitters, which, to my mind is an objection, though some think this is a very valuable characteristic.

The Brahmas are quiet and very pleasant to manage. The cockerels are quiet until, they are seven or eight months old, and so can run with the hens. The hens are good sitters, but are very easily dissuaded from sitting if only kept over one winter, and it is never profitable to keep any fowl beyond two years.

It will be readily understood, then, why I sold off all my Leghorns at a nominal sum after a three years' trial.

A year ago I got some Plymouth Rocks. Of course one year's trial is hardly sufficient, but unless they do better for the next two years I shall have some cheap Plymouth Rocks for sale. These are good for table use, but are smaller than the Brahmas and no better. They are far inferior as winter layers, and their eggs are smaller. At our house we have a decided bias in favor of the large, richly-colored Brahma eggs.

After several years' experience I have only one point on which to discount the Light Brahma. There is not quite enough white meat. Brahmas should be hatched in March and April; then we shall have abundant eggs during the succeeding winter. Let no one who keeps Light Brahmas forego the important suggestion to devote all their fowls to table use before they pass the second birthday.

CHICKS AND SNOW.

When the snow is here and the weather severe, it is only with the best of care that a hen can raise a brood of chicks. Much depends upon the hen, though her capacity is often over estimated. The hen should have not more than ten eggs in winter, and a quiet hen will be more successful than one that is active. The greatest danger comes from some precocious chick that is never at rest, it causing the hen to be continually following it at times, thus preventing her from hovering the weaker ones. It is better however, to keep the hen confined in a coop, even if she and the chicks have a dry shelter, for there will be less liability of loss from chilling of the chicks. As the chicks increase in size they will not be able to find places under the hen, if she has many of them. It is quite creditable to a hen in winter if she can raise six chicks, and she will probably be more successful with five. Night is the time when the chicks need the most warmth, and it is then that the hen should be securely placed where the cold winds cannot reach her and her brood.

THE HEROIC HEN.

In the western part of Massachusetts, says a contributor of the *Churchman*, a man had a fine stock farm; that is, a farm for raising cows and horses. But a few weeks ago a fire broke out in the barn, and burned not only the building and the hay, but most of the animals also. After the fire, the owner walked over the ruins. It was a sad sight to see the charred bodies of his fine Jersey cows and his high-spirited horses, to say nothing of the money lost with them. But at the end of the barn he saw a sight which touched him more than all the rest. There sat an old black hen. He wondered that she did not move her head to look at him as he came near her, but he thought she must be asleep. He poked her with his cane, and to his surprise the wing which he touched fell into ashes. Then he knew that she had been burned to death. But out from under her came a faint little peep, and pushing her aside with his cane, the man found—what do you think?—ten little live yellow chickens! The poor hen had sacrificed her own life to save them, and had held her place in the fire as Casabianca held his on the burning deck That sight touched the man more than anything else, and he has to own his eyes grew a little more moist than usual.

THE LIGHT BRAHMAS.

The Light Brahma is the largest of all breeds, and has the advantage of possessing a small pea-comb, which protects it against the frost. As the Brahmas are less active than the small breeds, they are more contented in confinement, thus enabling them to pass through the winter with less liability to feather-pulling and other vices due to idleness. They are heavily feathered and endure the cold well. The hens lay fully as many eggs during the entire year as the non-sitters, and it is claimed for them that they are the best winter layers. They are very hardy and not as liable to roup as are some breeds. One objection to them, however, is that they fatten very readily, and must be fed judiciously. If they are kept in warm quarters and made to scratch in litter, they will keep in good condition.

For improving the common fowls, the Brahma breed is excellent, as not only size, but hardiness and prolificacy are added. The Brahmas seem to be adapted to all climates and conditions, which gives them a high place in the list of breeds intended for general utility.

INHERITED DISEASES.

Some flocks are never thrifty. Disease seems to appear without apparent cause, and the slightest exposure leads to roup or something allied to it. We have known whole flocks to escape roup when all the birds belonging to a near neighbor were affected. Consumption, scrofula, bronchitis, asthma and such diseases are surely transmitted to the offspring of fowls, as in the case of animals. There is not enough attention given the selection of fowls with the view of preventing disease and avoiding the liability of hereditary transmission.

When roup appears in a flock, it denotes some organic weakness, and if it spreads rapidly to all members of the flock, the indication is that the members are of the same family, and more readily susceptible to disease than some other flocks. It is safer to avoid using any birds for breeding purposes that have at any time been sick with a contagious disease, and by so doing the flock will in a few years be hardy and the difficulties lessened.

SOUR MILK.

Sour milk should be used for mixing ground grain, as it will not only then be more acceptable to the fowls, but will also improve the mixture. Used with one part of bran, one part corn-meal and two parts ground oats, an excellent mess is obtained. We do not approve of soft food more than once a day, and during cold weather such food should be scalded and given to the hens while the food is warm, as a morning invigorator.

DOUBLE WALLS.

Whether double walls should be used or not depends upon the cost of material. If half-inch boards, clapboards or any cheap lumber can be had, with a plentiful supply of sawdust or chaff convenient, it will be an advantage to nail boards on the outside walls, to strips placed there for that purpose, and fill the space with the sawdust, so as to add to the warmth. A thickness of only one or two inches of sawdust will be found beneficial, as it will serve to stop up the cracks and crevices, and keep out the cold winds.

ROOSTS—LAMENESS.

It is as well to have the roost only six inches above the platform as to have it higher. Many fowls become lame from the constant strain upon them in daily getting off and on the roosts, which lameness does not only cause the bird to droop, but renders it unprofitable. Bumblefoot is also caused by high roosts, and stiffness of the joints, which is ascribed to rheumatism, arises from the same source. Low roosts are better, and can be made at less cost.

BROKEN EGGS.

Large and heavy hens are liable to crush some of the eggs in the nest with their feet, and the eggs will become smeared with the contents of the broken eggs. The proper plan to pursue in such a case is to take the eggs out of the nest, wash them in warm water, clean out the nest, and add new hay or straw. Unless this is done lice will soon take possession.

NESTS FOR SITTERS.

Never make a nest so as to compel the hen to jump down upon the eggs, for for though she may do no damage for awhile, yet she is liable to break one or more of them at any time. The nest should be so constructed as to allow her to walk in and place herself in position on the eggs.

THE DROPPINGS.

Scatter the droppings on the garden plat as fast as they accumulate, as it is difficult and troublesome to attempt to preserve them during the summer. By thus disposing of them the work of cleaning out the poultry-house can be done in a shorter time than if the droppings are to be prepared in some manner for preservation.

PLENTY OF GLASS.

Large windows are an advantage to the poultry-house, as they permit of the entrance of the rays of the sun, and not only allow of warmth but light. During the winter season the hens will remain outside and face the storms rather than to occupy a dark poultry-house, and for this reason, light is even more important than warmth. With a well-lighted house and plenty of litter, in which the hens may scratch and work, they will be more contented, keep in good condition and lay during the winter.

LIGHT COLOR OF YOLKS.

When grass fails there may be a liability of the coloring matter of the food being insufficient to give the much-desired deep color of the yolks. The lack of color, however, does not indicate a lack of quality in the eggs, as the color depends largely on the food, the deeper color being obtained when there is an abundance of a variety of green food.

FROSTED COMBS.

Birds with large combs, such as the Leghorns, are easily affected by cold winds when the weather is severe, the comb sometimes becoming frozen. When this happens, the bird is then in pain, and becomes useless until the comb heals. The freezing of the combs is one of the obstacles that cannot easily be overcome; but it may be partially avoided by anointing the combs with glycerine once or twice a week.

THE GUINEA-FOWL.

There is no domestic bird that equals the guinea-fowl on the table. It comes nearer our game birds in flavor than any other, and although guineas are seldom sold in market, yet the farmer can raise them for home use, as a luxury, and secures a large number of eggs as well. If raised with the chicks in the barn-yard they will lose their wildness and remain near the house.

THAT DRAFT OF AIR.

Nearly all the inquiries from our readers who desire replies to their letters, are in regard to diseases or ailments caused by exposure to currents or drafts of air from some source. These drafts may be from a ventilator, a crack in the wall, a knot-hole, or from some source unknown; but they cause swelled heads and eyes, blindness, croup and other difficulties due to colds.

RAISING THE TEMPERATURE.

Hold your hand over an oil-lamp, and you will notice that the lamp gives off a great amount of heat. On very cold nights hang an ordinary stable lantern in the center of the poultry-house, and though you may not make the house warm, you will materially raise the temperature and prevent frosted combs.

POULTRY FOR PROFIT.

This book is No. 1, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the POULTRY KEEPER at sixty cents we will send the book and also the paper for one year.

SOMETHING YOU WANT.

It will cost you only five cents to get the following back numbers, and they are worth $10 each if they could not be procured when desired. Bear in mind that there are a large number of *illustrations* offered—as the following shows:

Brooders, Incubators, Appliances, Poultry Houses, etc. (many illustrations). Aug. 1889 and Aug. 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte Fertilization of Eggs. Scoring Games. Oct, 1889

Poultry Houses. April, 1887, Oct. 1888, and July, 189 . Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec. 1891.

A Whole Library of Points. A grand issue. August, 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892

Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept. 1891.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Houghton's (Cleveland) Poultry House. February, 1888. Also April, 1892.

Each issue contains other valuable information also. You have the whole outfit shown of the pipe system of brooding in the brooder issue, and the forty-two rules on raising broilers has the whole thing. And yet you can get any one of them for only five cents.

HE SAYS HE DID NOT DO IT.

In our report of the World's Fair poultry show we made some statements, and sure enough some one "hollers." We mentioned no names, nor will we do so now. One party, however, claims the right to be heard. His request is but fair. As we gave no names then we will not do so now. Here is his letter to us:

I notice you write up in December number of the late World's Fair, on page 137. This attack on the judges will be left to them, as they are able to defend all criticisms.

You say twenty-five voted in the A. P. A. without paying anything. This is not true. Twelve men were admitted before the vote, one from New Jersey, three from New York, two from Kansas, two from Missouri, and one each from Ohio, Nebraska, Illinois and Washington. Three of the above paid Mr. Peer, the Secretary, before the vote, and four paid Mr. Brown. Mr. Sternberg, of Kansas, made the motion to allow them "all" to vote, and it was he who nominated Mr. Forsyth, seconded by Mr. Blunk, of New York, one of the new members. Both these gentlemen are able men. Better not attack them.

Oxford sheep the next attack. We made a show of sheep in the barn up to the time the poultry show should have opened. The sign was taken down the moment the poultry sign went up on the barn, and was not there all the time, although it had a right to be, as we had a permit.

Next, the first prize Plymouth Rock, cock tail feathers. They were not clipped, neither were they in any way tampered with. The tail was not full moult, and clipping would only make matters worse, besides throwing him out for competition. Such talk is the sheerest nonsense, and we ask that men who make such statements make them over their own names. We leave this to the judge who is attacked, and who is able to take care of his end.

First prize Plymouth Rock hen is the next point of attack. She was a pullet in 1892, and could not be one in 1893, and no one would be so stupid to show a pullet for a hen, and especially in October at that.

No one had enteries for himself and his two sons. This is not true.

Next, the article says there were twenty-seven parties who then voted who did not pay a cent, which is incorrect by more than half, and Mr. Bridge, the presiding officer, was in no wise to blame, as I have stated above, but Sternberg had best be allowed the honor, and I am sure no one objects to anything Sternberg does, as he is generally right—not always—especially as to color of Buff Cochins—but our advice is don't pitch into Sternberg. 'Tis safest to jump on to innocent Bridge always.

The next is Plymouth Rock breeding pens. We leave that for February number. We do not believe that any one tried to influence or bulldoze the judges in any manner. Name the party, and the judges? The judging in all the prominent and strong classes was done by five men from five different states, each man on a different section, and we feel safe in saying that no one outside of the officers knew where the judges went until they were at work, and don't believe that any one solicited a single judge to go on his breed, or breeds, and make the statement as a fact.

I will state at no time direct or indirect, did we ask, solicit, or cause to be solicited, before the show, or during the show, any one to vote or work for us for any office whatever, and have the utmost confidence and respect for Mr. Forsyth, and his friends and hope to meet them all as friends always. We did not care for any office, and wish it understood that this personal attack on us, and our stock, is unfair and unjust, and uncalled for, and we ask the editors of the POULTRY KEEPER to allow us to defend ourself against these onslaughts.

Our friend states that only three new members paid before the vote. That is what we stated also. There was no motion made to admit any members unless fully paid that we heard. The usual motion to admit new members may have been made, but the motion always applies to those that had paid.

The Oxford sheep sign was up when we left, and may be up now for all we know. What do breeders who were there think of this man's statement that the sheep sign was taken down "the moment the poultry sign went up on the barn."

As to what we may expect from "Judge" this or that does not cause us any loss of sleep.

As to clipping the cock, we had others to notice it. Either all of us had had eyesight or the wrong bird was in the coop. If we are in error we will willingly retract. That a bird in "moult," should take first prize, when *scored* is *curious*.

A pullet may have been a pullet in 1892 and 1893—late hatched. This one *was* a pullet, not a hen.

It is true that no one had entries for himself and two *sons*, we were in error. One was a *son* (David), and the other a *daughter*, (Myrtle). The defence above is a miserable quibble.

If twenty-seven new members did not vote them somebody got the totals wrong. It took that number to make the total vote cast, with those who answered to roll call.

The attempt to get the breeding pen was not even finished when the show ended. The judge was followed and intimidation attempted.

As for the last paragraph we know differently, especially that "the party did not care for office, etc."

We make no *personal* attack, as no name is mentioned, but we *did* report the show. In corroboration of our statement we give the following, by Mr. W. A. Gates (a gentleman unknown to us), who thus wrote the *Poultry Herald*. The italics are ours. We use dashes in place of the names. Mr. Gates says:

In management, however, the Columbian Poultry Show will long hold pre-eminent place. A superintendent was not appointed until it was time to clear out the stables and put up the coops. *But even then the appointment was the result of political wire pulling.* That State, of all the States politically, where politics is served three meals per day, and each day of the year, Indiana, had ambitions in this department. Mr. ——— thought he saw a chance to poll some persimmons and, like the turkey gobbler after the grasshopper, took it in. George Seegar, of Indiana, was superintendent, and Richard Twells, of Indiana was assistant. In fact this seemed to be Indiana's especial patronage. ——— brought about the arrangement, and from first to last, was the power behind the throne. The premiums were large and the honor of winning supposed to be great, and ——— made ready for the occasion. *The rules provided that but one entry should be made in each class by any one person.* But this was no obstacle to an ambitious politician, with a large family. Birds could be entered in the name of each member of the family. Hence the ——— family were well represented and had quite a show of their own. Mr. ——— used to breed some, but not much lately—so specimens were bought and borrowed for the occasion.

A letter which we saw from a large Eastern breeder says in substance that he would have all the winners upon one leading breed, and they have since been return- to him.

Upon these coops of *borrowed birds*, as well as upon all conspicuous places about the barns, was the sign, "Owned and bred by ———." Now, if ——— meant that he owned and bred the *whole show*, he was all right; but if he meant that he owned and bred that particular pen of birds he was all wrong. But why should not ——— buy, borrow and exhibit? *Was this not his show?* He made the superintendent and the superintendent made the judges. The superintendent was overheard very emphatically impressing upon one judge, from whom he wanted some favor, that if is had not been for him, said superintendent, said judge would not have been there. This was ———'s opportunity, and he came with his whole family. *Times were hard and premiums high*, and he wanted firsts, seconds and thirds, and he got them quite generally. With wires laid throughout every barn, all ——— had to do was to pull them and things jumped his way. The wires were pulled and ——— was happy.

Such was, in brief, the Columbian Poultry Exhibition. It is with sorrow and regret that we write its failure, and contemplate what might have been, with a master hand at the helm, guiding *not for selfish purposes*, but for the success of the great cause. How great an advantage might have flowed by the arousing of interest in the public at large no one can measure. As it is, it is a serious question whether the progress of poultry culture has not been retarded.

Mr. Gates should also look over the list of entries and the *premiums*. He will then learn the value of being an *advertiser* in a paper where the editor was a judge. That is a matter which deserves notice, and we flatly state that some prizes went to parties that were not deserving. It is also strange what influence an advertisement will have on a paper. It is well known by every breeder at Chicago that the whole thing was simply a pot pie for one or two, and one editor has made it his business to not only use the A. P. A. to provide him a job when it could be secured, but has also abused some other man for getting the same job before.

So far as Mr. Gates' remarks above are concerned we believe he is mistaken in regard to some points, especially relating to Messrs. Twells and Seegar, and it may be that the charges by Mr. Gates in regard to borrowing birds is a mistake, but it is certainly curious that he states almost the same as in some things we reported last month, yet we never met the gentleman and the *Herald* and POULTRY KEEPER came out nearly at the same time.

We wish to ask breeders and others who were there what do they think of the letter of the supposed aggrieved party, who deliberately tells them that they did not see what they saw?

Now, here comes *Poultry Topics*, and a little more light is given. It says:

"The rules would admit of but nine birds of some variety by one person. This did not give ——— enough rope, so he looked around and found his boy David and entered a lot of birds in his name. Still short, so he looks again and saw his daughter Myrtle, so more entries in her name.

* * * * * * *

The superintendent let this pass, the judges saw it and winked. After all, ——— was president of the A. P. A., before the scoring was done, and a jolly fellow, and so it passed"

Further comment by us is unnecessary. We have given enough above to show that our report of the World's Fair Poultry Exhibition was as nearly correct as it was possible to give, and we here state that we will cheerfully correct any errors pointed out to us in our report.

SHOWS TO OCCUR.

Jan. 2-5.—Northern Middlesex Poultry Association, Clinton, Mass. A. A. Fillebrowne, Secretary, Ayer, Mass.

Jan. 1-6.—Ontario Poultry Association, New Hamburg, Ontario, Can. Thos. A. Browne, London, Ont., Secretary.

Jan. 2-8.—North Kansas Poultry Show, Atchison, Kansas. S. G. Sprague, Secretary.

Jan. 3-5.—Huntington and Shelton Poultry Association, Shelton, Conn. H. D. Hendrick, Secretary.

Jan. 3-6.—Maryville Poultry and Pet Stock Club, Maryville, Mo. Fred. Parcher, Secretary. Decimal Score Card. I. K. Felch, Judge.

Jan. 3-6.—West Chester Poultry and Pigeon Association, West Chester, Pa. E. S. Hickman, Secretary, Cheyney, Pa.

Jan. 8-12.—Ohio State Poultry Association, Columbus, Ohio. Dr. M. F. Lee, Secretary.

Jan. 8-13.—Kansas State Poultry Show, Topeka, Kansas. C. H. Rhodes, Secretary, North Topeka, Kansas.

Jan. 9-12.—Rochester Poultry and Pigeon Association, Rochester, N. Y. J. F. Tallinger, Secretary.

Jan. 9-12.—Rockingham Poultry and Pet Stock Association, Portsmouth, N. H. George B. Wallace, Secretary.

Jan. 9-13.—Southern Poultry and Pigeon Association, Atlanta, Ga. Dr. T. W. Tuggle, President; Geo. M. Downs, Secretary.

Jan. 9-16.—Waterloo, Iowa. John M. Parker, Secretary.

Jan. 10-13.—Northwestern Ohio Poultry and Pet Stock Company, Tiffin, Ohio. D. S. Biller, Secretary.

Jan 14-20.—Denver, Colorado. J. L. McDowell, Secretary.

Jan. 15-20.—Los Angeles Poultry Association, fifth annual exhibition, Los Angeles, Cal. John C. Stedman, Secretary, 117 East Second Street, Los Angeles, Cal.

Jan. 16-18.—Canastota Poultry and Pet Stock Association, Canastota, N. Y. H. O. Travis, Secretary.

Jan. 16-19.—New England Light Brahma Club, Boston, Mass. G. W. Cromack, Secretary, Stoneham, Mass.

Jan. 16-19.—Nebraska State Poultry Show, Lincoln, Nebraska. A. Lemen, Secretary.

Jan. 16-19.—Saratoga Poultry and Kenne Club, Saratoga Springs, N. Y. D. G. Eddy, Secretary.

Jan. 16-20.—Piedmont Poultry and Pet Stock Association, Greenville, S. C. R. Y. Hellams, Secretary.

Jan. 16-23.—Lancaster Co. Poultry and Pigeon Breeders' Association, Lancaster, Pa. G. M. Woods, Secretary, Leaman Place, Pa.

Jan. 18-21.—East Tennessee Poultry Association, Knoxville, Tenn. Jno. W. Flenniken, Secretary.

Jan. 22-28.—Connecticut State Poultry Society, Hartford, Conn. R. G. Bailey, Secretary.

Jan. 23-26.—Pittston Poultry and Pet Stock Association, Amory Hall, Pittston, Pa. J. J. Bryden, Secretary.

Jan. 23-26.—New Orleans Fanciers' Club New Orleans, La. G. W. Seutell, Jr., Secretary, P. O. Box 1404, New Orleans, La.

Jan. 23-27.—Harrison Poultry Association, Harrison, O. John C. Small, Secretary.

Feb. 5-10.—The Midcontinental, Kansas City, Mo. J. J. Cassidy, Secretary, Box 562, Kansas City.

Feb. 8-13.—New York Poultry and Pigeon Association, Madison Square Garden, New York City. H. V. Crawford, Secretary Montclair, N. J.

ATKINSON'S HEN FOOD.

In our last issue we called attention to Mr. Edward Atkinson's combination of molasses and oyster shells, and would not be surprised at the next diet being chopped barb wire and sherry wine. In the *Southern Fancier* Prof. John M. McCandless, former State chemist of Georgia, thus gives his experiments with the mess He says:

"I have read with much interest the copy of the *Southern Fancier* containing the article of Mr. Edward Atkinson, the celebrated Economist, on the subject of poultry feeding. In replying to your request that I give you my views as to how oyster shells would be affected by the treatment with molasses suggested by Mr. Atkinson, I wish it to be distinctly understood that I am not the 'captious critic' so severely castigated in Mr. A's instructive and humorous article just alluded to. When you first asked me the question, what will a mixture of oyster shells and molasses produce, I was inclined to rather agree with the 'captious critic' than with Mr. A. and answered that it would be merely a mixture of oyster shells and molasses, and not a saccharate of lime; knowing, however, that a man is apt to go wrong, unless he verifies his opinion by actual experiment, I agreed to make an experiment for your enterprising journal, so as in a measure to settle the question. I took some oyster shell which is practically pure carbonate of lime, reduced it to powder, weighed a portion into a glass vessel, and covered it with about fifty times its weight of molasses. I then put it into an oven surrounded by boiling water, and allowed it to remain at a temperature of 212 Fahrenheit for two hours; I then removed it, diluted it largely with water, and finally by methods well known to chemists separated the lime which had not been dissolved, from the molasses and water. I found that the oyster shell had lost not quite ten per cent of its original weight; as I was satisfied that no sucrate had been formed by the action of the molasses upon the carbonate of lime, I looked further for the cause of the ten per cent loss in weight, and found it to be due to the acidity of the molasses which was acid with Acetic acid produced by fermentation, consequently, ten per cent of the oyster shell had passed into solution as acetate of lime. Now, Mr. Editor, Mr. Atkinson has been misled just a little and consequently misleads others when he states that four pounds of molasses will dissolve one pound of lime, and then infers that the molasses would also dissolve the oyster shell. It is true that four pounds of molasses will dissolve one pound of lime, but it is not true that it will dissolve one pound of oyster shells. The word lime means quick or caustic lime, calcium oxide (Cao) but oyster shells are not lime until they have been burnt at a high heat. They are carbonate of lime, and would not be affected by a pure acid, free molasses, or by a solution of pure sugar. In other words, sugar has the power of uniting with caustic lime to form a sucrate or saccharate of lime, but it has not the power of displacing carbonic acid from its union with lime as in the case of oyster shells. On the other hand, carbonic acid *has* the power of displacing sugar from its union with lime; this may be proven by treating some caustic lime with sugar water, filtering it off perfectly clear, and then passing a current of carbonic acid gas through it, when the lime will be separated as carbonate of lime causing the solution to become cloudy. So much for the strictly technical side of the question Mr. Editor, but I quite agree with Mr. Atkinson that this does not touch the 'meat' of the question. It does not make any difference whether you call it sugar of lime or saccharate or sucrate or acetate of lime, or oyster shells and molasses, or 'sucrated envelopment of crustacea,' the essential point is getting the hen on the outside of the mixture, and trusting to her for results."

Reference to our January issue will show that Prof. McCandless agrees with us exactly, and instead of Mr. Atkinson enlightening anybody on oyster shells he has simply demonstrated that there are some things that others know better than he.

THE BREEDING YARD.

How many poultrymen or farmers are there who can say what kind of a chick an egg will bring forth? We are sure that very few can do so. It is impossible to know anything of the breeding of the chicks before the eggs are incubated when a large flock of hens and several males have the run of the farm; but it is possible to know something of what should result when a few hens are yarded with one male. That the male will be the sire may be assured, but there will be no certainty of which hen is the dam, or which laid certain eggs that were collected. As hens differ very much it is at times desirable to use the eggs of some particular hen, in order to perpetuate her good qualities. There will be something gained if all of the hens are of the same breed, for in that case there will at least be uniformity among the chicks, and where the poultry yard is convenient for observation some of the hens will be known to lay in certain nests and lay eggs of peculiar shape or of uniform color. This matter is worthy of attention where flocks are to be improved.

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

M. K. BOYER, ASSOCIATE EDITOR.

COMMUNICATIONS

TO THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

ANY back number of this paper for only five cents.

READ our advertisements. They have some good bargains offered.

YOU cannot raise broilers in winter without an incubator or brooder.

WE replied to about 10,000 letters the past year in answer to our readers.

THIS paper is only twenty-five cents for six months. Postage stamps taken.

LOOK out for the top ventilator. We still insist on calling your attention to it.

MR. C. W. JOHNSON, Crawford, N. J., is secretary of the American Wyandotte Club.

THE Langshan Club will meet at Hartford, Conn., on January 25, at 2:00 o'clock, p. m.

THE *Dog Fancier*, Battle Creek, Mich., and POULTRY KEEPER club togther at seventy-five cents.

THE New Orleans Show occurs on Jan. 22-25. Send to Mr. G. W. Sentell, Jr., Secretary, box 1404, for premium list.

MR. J. K. FELCH states that he gave no one the privilege of using his name for office at the recent meeting in Chicago.

MR. JOHN C. STEDMAN, secretary of the Los Angeles County, California, Poultry Association, is one of the hardest workers in this country.

SOME of those who have had reverses with poultry should first aim to find out where the mistake was before endeavoring to find a cure.

SALEM, MASS., will hold her show in Howard Hall, Salem, Jan. 16th to 18th, 1894. Mr. George F. Newcomb, Salem, is secretary and treasurer.

EXHIBITORS will not be required to furnish coops in which to exhibit their fowls at the Atlanta Show in January. The Association will furnish all coops necessary.

WHEN your little chicks droop, and have bowel disease, you can guarantee that they have been chilled. You must give them summer weather in the brooder house.

THIS paper reaches you promptly by the first of the month. If you miss even a single copy write us, as it has been mailed and may go astray in the mails.

EACH number of this paper is a whole book. It costs you less than one cent a week. A single issue may save you a hundred dollars. Don't miss any of them.

IT is not fair to Mr. Felch to ignore his claims. He should be met with logic. The poultry fraternity is indebted to him for much that has added to its prosperity.

CAN the A. P. A. hold two *annul* meetings in one year. Could the Standard be revised during the *fourth* year instead of the *fifth?* Were the proceedings legal? These points are worth considering.

THE Providence, R. I., show was well managed by Mr. Cushman, ably seconded by Mr. W. J. Satter, who attended to the fowls. Mr. Cushman will find himself in great demand hereafter.

SEND to P. H. Jacobs, Hammonton, N. J., and get plans of an incubator. Send two stamps for postage and stationery. Send us also the names of any persons known to be interested in poultry.

THE seventh annual fair of East North Carolina Fish, Oyster, Game and Industrial Association will be held at New Berne on Feb. 19th to 24th, 1894. Poultry will be one of the specialties. Mr. Charles Reizenstein, New Berne, N. C., is secretary.

MRS. EMMA J. MELLETTE is gaining a great reputation as a writer. Her articles are among the best that appear in the poultry journals. The *Colorado Poultry Journal* recognizes her talents. It is published at Denver.

LOOK OUT for the Atlanta, Ga., show. It will be *the* Southern show of this season, and is going to draw crowds. If you wish a royal welcome go down to Atlanta January 9th to 13th. Mr. H. A. Kuhns and Mr. Geo. M. Downs are the secretaries.

MR. CHARLES GAMMERDINGER, Columbus, Ohio, is a sky-scraper on premiums. At Wheeling, Indianapolis, Columbus, St. Louis, Kansas City, Washington, Pa. Crawfordsville, Ind., Vincennes, Ind., and other places, he swept the decks.

A NEW YORK breeder now comes forward and says that *his* strain won at Chicago. If so he must have bred his *strain* and *sold* them to the winner. It means birds either bought or borrowed to win prizes. Who is to get the honor?

THE East Tennessee Poultry Association will hold a show at Knoxville, Jan. 17th to 20th, inclusive. Mr. John W. Flenniken, Knoxville, is Secretary. Much interest is being created in that section, and the breeders are are making a good start.

WE expect to send out 100,000 copies of the POULTRY KEEPER in February and nearly as many in March. This month the edition is also very large, We *have* to do it for our own benefit, and to hold our circulation, as well as increase it every year.

THREE papers for one dollar—POULTRY KEEPER, *Southern Fancier* and *Farm Poultry*. Or any two of the following may be taken with the POULTRY KEEPER: *Fanciers. Review, Pratical Poultryman, Poultry Herald, Michigan Fancier* or *Paultry Topics*.

WE wish to state that the Mr. Bain, who advertises in the *Ohio Poultry Journal*, mentioned by us in a former issue, is *not* the notorious J. M. Bain. So far as we can learn Mr. Bain is an honorable and gentlemanly man. We mention this in justice to him.

THE third annual exhibition of the North Baltimore Poultry and Pet Stock Association, of North Baltimore, Ohio, will be held in that city January 25 to 27, inclusive. Mr. T. J. Marshall, of Middletown, O., will do the judging. For information on premiums, etc., address Mr. G. B. Smith, the secretary, North Baltimore, Ohio.

MR. CUSHMAN writes us that the Turkey bulletin, No. 25, can no longer be furnished by the R. I. Experiment Station to persons out of the State. The Experiment Station Record, published at the office of Experiment Stations, U. S. Agricultural Department, Washington, D. C., contains abstracts of all Experiment Station bulletins, and is sent free to all who apply.

THE great show of the West will be held at Indianapolis, Ind., Jan. 15th to 20th, inclusive, by the Indiana Poultry Association. A cordial invitation is extended to all breeders to show with them. A premium won there is a good advertisement for any one. Mr. Sharp Butterfield, of Windsor, Ontario, and Mr. F. J. Marshall, Middletown, Ohio, have been selected as judges. These gentlemen are well known as experts, having both been at the World's Fair. Send for premium list to Mr. Wm. H. Fry, Secretary, 96 Buckle street, Indianapolis, Ind.

THE Tiffin, Ohio, Poultry Show, which occurs on January 10th, will be judged by Mr. J. Y. Bicknell.

THE most successful broiler raiser at Hammonton, N. J., this season is Capt. Wm. Crawford, who never raised a chick before in his life. His success is due to the fact that he keeps his brooder room always as comfortable as a living room. His loss is less than five per cent.

THE Harrison, O., Poultry Association will hold their Fifth Annual Exhibition January 23rd to 27th, inclusive. Mr. F. J. Marshall will judge. The cash premiums amount to $100. The payment in full of all premiums is guaranteed. This association is organized, conducted and supported by the business men of the city. Premium lists now ready. Mr. John C. Small is Secretary, Harrison, Ohio.

THE great *Fanciers' Journal*, with M. K. Boyer at the helm, is the leading weekly in America devoted to poultry. It is handsome in make up and fit for a library. It is $2 per year, but those who subscribe through us will get the POULTRY KEEPER also, as good measure. Send to *Fanciers' Journal*, Philadelphia for sample copy.

AN APPEAL TO OUR READERS.—We ask each and all to drop us a postal card, giving name of some one who is interested in Poultry. We wish names to send them sample copies. We always try to answer inquiries, and oblige one and all, and will you not now do us that one favor, a small one for you but a great one to us.

At the Chicago meeting of the A. P. A. the following breeds were admitted to the Standard: Buff Plymouth Rocks, Buff Wyandottes, Buff Leghorns, Silver Duckwing Leghorns, Indian Games, Silver and Golden Campines, Birchen Games, White and Black Cochin Bantams and Game Bantams. And the Black Wyandotte, which breeds purer than any of these, was passed by.

The Vermillion County, Illinois, Poultry Association will give their first annual exhibition at Danville, Ill., Jan. 23d to 25th, 1894. Cash prizes will be paid, one dollar firsts and fifty cents on seconds on all single entries, with two dollars on first breeding pen and one dollar for second. A grand special list of $3.00. All invited. Entry fee fifty cents for breeding pen and twenty-five cents for single entries Mr C. Everett is secretary, Dannville, Ill.

THE first annual exhibition of the West Chester Poultry and Pigeon Association will be held at the Tattersall, West Chester, Pa., January 4th, 5th and 6th, 1894. Spratt's Patent Coops will be used, and extra care will be taken of the birds while at the show. Arrangements have been made with the Adams and United States Express Companies to return all birds free. Messrs. J. D. Nevius and G. O. Brown are the judges. President, N. G. Temple, Pocopsin, Pa.; Secretary, W. Hickman, Jr., Westtown, Pa.

OUR Los Angeles friends should not fail to read the proceedings of the Chicago A P. A. meeting. We thus *publicly* state that our name was placed on the Executive Committee by our California friends at the Los Angeles meeting, who insisted upon it against our protest sent. They are informed that the Nominating Committee was put in the hands of a selected party who *revengefully* took the name off. It does not worry us any, but we wish the Los Angeles poultrymen to know the facts.

THE NEW ORLEANS SHOW.

The New Orleans Fanciers' Club gave its inaugural show last February. It proved to be quite a success, and the Fanciers of New Orleans have responded generously to a call on them for a *cash* guarantee to hold a larger show January 23rd to 26th. They now have a guarantee of *one thousand dollars*, and hope to increase even that before they hold their show. That insures that all premiums and expenses will be paid in *cash* on the last day of the show. Every one knows that this is the only way to run a successful show, and this will be a success sure. The premium lists are now ready. Address the Secretary, Mr. George W. Sentall, Jr., box 1404.

SOMETHING ABOUT A "BLUFF."

We notice that several poultry journals state something about a "bluff" on our part, and that we had *retracted*, etc. We will here state that we have made nothing of a bluff, have not retracted anything, and that the whole statement is *untrue*. Anything that we have stated we will either retract it in this paper, or *prove* it. We will willingly retract anything that we have done if in error, but not otherwise.

THE CHEAPEST THING OUT.

We have arranged to offer our readers one of the best combinations out. It is an offer of a whole bunch of good things. Here it is:

The Western Rural, (semi-weekly)	$1.25
Market and Crop Review,	75
"The Dream City," (World's Fair picture),	1.00
POULTRY KEEPER,	50
Total,	$3.50

All for one dollar and twenty-five cents. The *Rural* is a *semi-weekly* agricultural journal, published at Chicago. The *Market Review* is devoted to finance, transportation, prices, crops, etc.

The picture of the World's Fair is a lithograph in water colors, of twelve shades, and the finest yet produced as a souvenir of the great occasion, 16x25 inches in size. It shows the buildings just as they were. Here you have three papers and the souvenir for $1.25.

A CHANCE FOR YOU.

We wish to say to all who read the POULTRY KEEPER that they can make poultry pay during the next three months. Here is the plan:

Some of you bought stock from the best breeds.

Take a little two-line advertisement in the POULTRY KEEPER for February, March and April.

It will cost you only $2.55 for the whole three months.

One sitting of eggs sold will give you your money back.

You can take more space if you wish, but four lines are ample.

Every advertisement in this paper is read.

February, March and April are the best egg months.

You have just as much right to try it as others.

We expect to send out during those months 150,000 copies of the POULTRY KEEPER.

THE PROGRESS MADE.

The breeders of poultry are not behind others. Progress in poultry raising keeps pace with that in everything else. Years ago there were no Leghorns, Plymouth Rocks or Brahmas. The Langshan had not been brought from China, and the Wyandotte was unheard of. In fact, some of the breeds did not exist at all. It has been through necessity that many of them have been introduced, and they serve to fill a want. They are the natural outgrowth of demand, and will at some future time yield to newer acquisitions that will be more suitable for the purpose required. Progress may be slow, and the change from one day to the next may be barely noticeable, but it is constantly occurring, and the progress made in one direction is sure to carry with it an advancement all along the line. Poultry raising cannot escape the inevitable, and it has slowly changed in methods until to-day the gallinaceous family holds a place upon the farm where before it was but little recognized.

With the progress made in breeds follows the methods of management. There was a step forward from the tree tops to the A. shaped house, which was simply a roof placed on the ground, and made more to protect the stables than for the comfort of the birds, but it was a stepping-stone for advancement, for the result was that a few eggs were obtained in winter, thus attracting attention to the necessity of warmth and protection for the hens if they are to

prove profitable in winter. To-day the poultry on some farms are given the best of attention and are kept under the most favorable conditions for affording a profit to their owners.

Feeding has changed. Corn was a staple article of food, and was excellent, but poultrymen have learned that meat, bone, milk, clover seeds and vegetables are also of great use. The hand bone-mill and the small clover-cutter are now considered indispensable adjuncts to the appliances of a well-kept poultry farm. The cheapest mode of feeding is to give the hens a variety so as to provide them with all the raw material from which to manufacture eggs. There is still room for improvement, and the future is bright for the poultry industry.

TREE TOPS AND EGGS.

A hen may live in the tree tops, but what about eggs? One of the most difficult problems is that of keeping the flock in winter so as to afford all the conditions of spring, for upon this depend whether the hens will lay or not. There is a class of educated and intelligent poultrymen who affirm that the roosting of the hens in the tree-tops is not always an unwise system, and they even go so far as to state that they have known fowls that were left outside to be free from disease, when those that were given the most comfortable quarters were dying of roup. These facts do not convince the progressive farmer that the open air is better than shelter, for if the fowls can, by generations and decades of exposure, become inured to hardship, the same rule applies to the horse, cow, sheep and hog. That it has been the case with horses and gradually degenerated them, may be shown by the Shetland ponies and the wild ponies on the islands along the South Atlantic coast; and it is also a fact that animals that have become capable of withstanding exposure have lost in fecundity and are becoming fewer.

With the domestic fowls the exposed flock produces nothing in winter. Being long accustomed to applying all its energies to simply existing, the production of eggs by the hen that is exposed in winter is not expected. Only in the spring, after the severity of winter has passed, is the hen expected to begin laying. If she then begins to lay, and gives a good report of herself until late in the fall, she may prove profitable because her ability to forage lessens her expenses.

It may be considered that one of the causes of disease in pure-bred flocks is the procuring of fowls from elsewhere. As farmers who allow their hens to remain outside seldom procure new blood, there flocks are more exempt from roup than those of the poultryman who secures a choice hen wherever he finds her. Roup is contagious, and is more frequently the result of contact than of exposure, yet it will occur in flocks that are unable to endure the hardships of tree tops in winter. The largest profits have been realized from flocks that have received the most attention and care.

MEETING OF NEW JERSEY BREEDERS.

The New Jersey State Poultry Society, at its annual meeting here to-day, decided against holding a poultry show this season, and instead will lend its efforts toward advancing the interests of the chickens of the State at the Madison Square Garden Poultry Show, February 8th to 13th, 1894. To this end the Secretary was instructed to arrange with the New York show management for time and place in which to hold a meeting during the show, and to arrange to have the Saturday of the show week for New Jersey Day.

A very important measure was introduced by Mr. B. R. Ivins, asking agricultural societies to so amend their poultry show lists that breeders who exhibit their own stock should not be compelled to compete against buyers with made up entries on circuit. The resolution was referred to Messrs. Diehl, Maple and Holmes for their consideration and judgment.

The new officers of the association are: President, A. A. Parker, Jersey City, N. J.; Vice President (one from each county represented in the membership), John Volonot, of Atlantic; W. J. Andrews, of Bergen; J. E. Diehl, of Burlington; T. E. Burrowes, of Camden; W. W. Hewitt, of Cumberland; T. C. Allen, of Gloucester; H. V. Crawford, of Essex; W. J. Stanton, of Hudson; Franklin Dye, of Mercer; M. Davenport, of Monmouth; C. R. De Hart, of Morris; Dr. A. T. Beckett, of Salem; Elmer Day, of Union; W. H. Ordway, of Middlesex, and J.C. Haines, of Hunterdon; Treasurer, Dr. J. C. Maple, Trenton; Secretary, C. W. Johnson, Crawford; Executive Committee, B. R. Ivins, W. J Andrus, Dr. Becket, C. T. Haines and W. J. Stanton.

The Committee on Legislation reported the bill passed and signed by Governor Werts, which permitted the society to be incorporated.

LOS ANGELES MAKES A NEW DEPARTURE.

The fifth annual exhibition of the Los Angeles (California) Poultry Association, will be held Jan. 15th to 20th, inclusive. Premium lists are now ready. Mr. John C. Steadman, Los Angeles, is secretary. In many respects the coming show of the Los Angeles County Poultry Association will be a radical departure from the stiff and formal affairs in the past. Instead of straight rows of coops, it is designed to arrange the floor plan in the shape of a landscape garden, with choice ornamental foliaged plants, giving the whole more the appearance of an English poultry park, so pleasantly described by Sewell, rather than an ordinary poultry show. By arranging the coops in irregular lines, and supplementing them with choice festooning, bunting, etc., the birds will certainly be shown to the best advantage, both for the benefit of the exhibiter and the general public.

In addition to this new and novel feature there will be duck ponds, singing birds in large aviaries, and a fine showing of pigeons and pet stock.

The judges have been selected with great care, and the show committee is composed of reliable men, all of whom have the interest of the fancier at heart, while the other officers are working enthusiastically to secure a successful exhibition.

The interest in thoroughbreds in Los Angeles county, in fact in all southern California, is wonderful and the California breeder cannot possibly supply the demand except by importations from the East. The money value of birds brought to California runs up into the thousands and it seems to us that it will pay *any* breeder who has fine stock to reach out for this trade, and the best way to advertise yourself is to send birds to the show that will "win." The decimal score card will be used, excepting for games, the game club card being substituted. If you have not received one of their handsome premium lists, send and get one.

MANAGEMENT OF YOUNG CHICKS.

This is No. 3 of our series, by P. H. Jacobs, editor of POULTRY KEEPER, and is intended for those interested in raising chicks in large numbers. The price of the book is twenty-five cents, but to those who subscribe to the POULTRY KEEPER for sixty cents we send the paper one year and the book.

SEPARATING THE PROFIT.

It is claimed that if a hen lays one egg a week for one year, she will pay all expenses necessary for her individual maintenance. If she lays two eggs, one of them is clear profit. But how does this effect the cost? Valuing each egg at two cents, it may be seen that the hen which lays three eggs a week gives twice as much profit as a hen laying two eggs a week, as the first egg pays the cost. The object, then, should be to so feed the hens as to avoid any lost time, and to secure the greatest number of eggs in the shortest period.

MENTIONINGS.

Mr. Theo. Sternberg states that he does not care whether the decimal score card or any other is used, but he is for comparison judging. He is willing for each show to decide for itself.

J. M. Bain, of Cincinnati, who two years ago swindled people by a concentrated butter scheme, has been sentenced to three years in the penitentary and fined $500. This is probably the same Bain so well known to poultrymen.

Mr. P. A. Webster, Cazenovia, New York, has invented a special wheelbarrow for poultrymen. It weighs only twenty-seven pounds, but is so strong that it will hold 200 pounds. It is cheap, and just the thing for a poultry house, as it is made to pass through the passage ways. We expect to illustrate it next month.

We received the catalogue of the Star Incubator Co., St. Joseph, Mo., which we consider a very creditable one, and which is sent free to all.

Messrs. James Rankin, of South Easton, Mass., and Geo. A. M. Fettridge, of Stroudsburg, Pa., are known as the "duck kings." Their books are worth ten dollars a piece, but we sell them for only fifty cents per book.

The Harvey Seed Company, 17 and 19 Ellicott street, Buffalo, New York, has issued a catalogue entitled "Cut Clover Hay," and it is free to all. It shows the advantages of cut clover hay prepared ready for use as food for poultry, and contains some excellent hints on feeding for eggs.

Mr. I. S. Cummings, Bangor, Me., sends us his circular of Kine's incubators and brooders, which is free. He also makes tanks for hot water incubators.

Those Buff Plymouth Rocks exhibited by Mr. J. D. Wilson, Worcester, Mass., at the World's Fair, attracted great attention.

Atlanta's show is going to be a "hummer." That is the claim.

Mr. Emery S. Pugh has returned to Utica, New York. Going to Missouri seriously interfered with his plans.

Editor Branday, of the *Practical Poultryman*, is carrying his head very high over his World's Fair show report. He says he "got thar" one ahead.

At last Editor Hamilton, of the *New England Fancier*, scores a good point. Even Uncle Mike had nothing to say this time. His illustrations of Mr. Joseph F. Carter's (Elmira, N. Y.) Buff Cochin pullet, from a photograph, is a step forward. They are the only true illustrations.

"Poultry Topics" say "we have inquiries for Wild turkeys and Narragansett turkeys: why don't somebody advertise them?" Well, Bro. Petts, we will say, for your benefit, that both kinds are very rare.

Editor Warner, of the *Poultry Bulletin*, still holds the front place for stirring up the breeders and editors with a poker. When the *Bulletin* appears everybody expects to get all the facts and happenings.

It is said that Mr. Victor Haldeman, manager of the *Fanciers' Journal*, that he is a good judge of a man, and that only a few minutes is necessary for him to "size up" an individual. From what we know of him we must admit that the claim in his favor is about correct.

If the McKinley tariff has put up the price of eggs, just about this time we know of a few incubator operators who are ready to petition for its repeal. Eggs are eggs now.

Dr C. T. Wiant, Marion, Ohio, the celebrated breeder of Buff Leghorns, has taken with Mr. J. Berringer as a partner.

The *Western Garden* says: "Take your boy or girl into partnership with you in the poultry business, giving them half the profits for their labor." We would like to know what kind of a "*business*" it is when a boy or girl can come in for *half* the profits. We believe there is *real* business in poultry, not child's play.

The question now is who got the *campines* in the standard. There is a "gentleman in the woodpile" somewhere in the matter, and we will soon expect to hear their praises, at one cent a line "Best table fowls," "lay 366 eggs a year," and "very hardy," etc. Trot out the campines.

It is rather out of place for a man to boom incubators when he has stock in a company, and then kick them when he cannot make it pay.

If Bro. Downs supposes that there is any "humble pie" being eaten up this way he is mistaken. Those who are trying to get a little notoriety through us will find that we fully understand. Bro. Downs is correct when he says that "he laughs best who laughs last."

The *Canadian Poultry Journal* Wallaceburg, Ontario, published by Mr. W. A. Lane, has made a great improvement in its appearance.

Every one of our readers who have pure bred stock should advertise. Do not wait, but "pitch in." A three line advertisement, for February, March, and April, will cost you but $4.05, and if you will sell only two sittings of eggs you will get your money back. Besides, we expect to send out 100,000 copies in that time.

In our December issue Mr. John Bennett, of Sunman,, Indiana, sent us a design of a shipping coop. Several mistakes occurred. His address was given as "Summer," Indiana, instead of "Sunman." Where it should have said "stitch in *lap*" it was "stitch in *top*." Also the birds which were shown us as his at the World's Fair belonged to another. He had seven entries but from several causes they did not get there in time.

We expect to give an interesting letter about the White Wonder fowls in our next issue.

The parties who endeavor to make the people believe that hens will lay 300 eggs a year forget that it takes a hen about ninety days to go through the process of moulting, which leaves but 275 days for egg laying, as but few hens will lay when moulting, and still fewer lay every day when not moulting.

The improved Monitor incubator, made by Mr. A. F. Williams, Bristol, Ct., received two medals at the World's Fair, which should have been mentioned in our report of last month.

CROSSING WITH MUSCOVYS.

The colored Muscovy duck will cross with any of the other breeds, but the produce of the cross becomes sterile—that is, the eggs from a cross-bred bird of the Muscovy and common duck will not hatch. This fact has induced some to claim that the Muscovy is not of the duck family, as they also require a longer time for the incubation of their eggs. The first cross, however, produces a choice carcass or market, and the experiment is worth a trial by all who are interested in ducks.

A FENCE FOR DUCKS.

A fence eighteen inches high, made of lath, will confine the large breed of ducks, but occasionally one will get over it. If so, clip a wing, or confine the offender in some other yard for a few days, as the others will soon learn how to go over. As a rule, however, no difficulty is experienced with a fence eighteen inches high, and especially if the ducks have plenty of water in their troughs, as they will not care to fly.

MR. KINNEY ON MEAT.

Mr. A. W. Kinney, Yarmouth, Nova Scotia, has been requested by a large number of our readers to enter more into details regarding his method of feeding meat, and in reply to them he sends the following letter, which will be found interesting:

I have taken note of a letter to you from Mr. A. J. Aldrich, of Orlando, Fla., and am much pleased that he has taken interest enough in my new method to inquire more as to the details of the feed and management. I shall be very glad to reply, and give him and others all the information possible.

In the first place, let me say, that there does seem to be a discrepancy in that article as regards the *exclusive* use of meat. But, as the editor says, the letter was long, and details were naturally overlooked. Then Mr. Aldrich will admit that there are lots that can be learned by explanations afterward. I thank him for bringing the points out that he wishes to know, for the reason that there are others interested. I have received nearly 100 letters in regard to this new method, from all over the United States, and while there are those that have not written me, or taken the method of friend Aldrich to get at what they wish to know, I will say here that any details that have not been given will be cheerfully answered through the POULTRY KEEPER. Yes, gentlemen, do not be backward in getting all the information you can of the very best method now known of caring for poultry, either for eggs, flesh or health.

My explanation as to that word "exclusive" is on this wise: I find that while the fowls are very fond indeed of meat, pure and simple, yet if mixed with ground grain of some kind it makes it roll up in small lumps just large enough to swallow well. The meat right from the cutter (unless cold) pats down, like a hot mash, as the hens will leave it in that state, when perhaps they hardly have enough, but if mixed with some ground grain they will eat to almost the bursting point. I have Light Brahmas that will take a half pound at a meal, twice a day, and if this were allowed they would soon become rolling fat and stop laying. My method in this direction is, that if it takes a hen more than an hour to lay, or egg is more than ordinary size, and if mishapen in any way, she at once goes into the starving pen for perhaps three days on water and air alone. It is a nice thing to do, in keeping a flock of hens laying the whole year through, without a stop. It has been accomplished with my flock of forty. They have layed steadily for more than a year. They started to moult in June, and would lay for a week or two till very ragged, or until the new quills started, when, owing to the tremendous pull on them for food, they stopped laying for two or three weeks, not more than four. While the others have been moulting one after the other, the first ones have started again, so that the supply has been kept up.

When mixing the meat from the cutter, there is put about one pound of ground grain with five pounds of the meat. This makes the composition about right. You can use your own judgment. If you have too much grain they will pick every kernel of meat and leave the grain every time. This goes back to the trough. If too much meat it pats down, and they will not eat so much in this way.

A very good reason can be given for cooking the meat. It saves a lot of labor and meat too, as, if well cooked, the meat leaves the bone (when heads and bony parts are used), and makes it easier than cutting and hacking away at the green parts, with spattering blood, etc. With meat alone it runs through the cutter beautifully, and is a lot of fun to cut up. Have tried both ways, and by all means prefer this way of cooking. But others, of course, may take pleasure in cutting, breaking, tearing and swearing at a big ox head. To avoid the latter I would rather cook.

There are a large number of authorities, so called, who particularly advocate a variety for fowls, and while I do not at all agree with any such idea, yet the meat and bone are cut up separately, and fed this way, after being mixed with the ground grain, to get all the good there is in the idea. By giving the hens meat for some days, and then bone for a day or two, I get all the benefit of the variety. So much nonsense is written about. Meat and bone are very much cheaper here than any other kind offered. It can generally be had for the taking away, but for saving the cast off parts of four or more animals each week I pay my butcher fifty cents. This amounts to say twenty-five cents per 100 pounds. But then you must remember that our esteemed editor claims that meat at ten cents per pound is the best feed if the eggs come, *and is cheap at that.*

Now then, here comes the latent doubt there seemed to exist in that article. "Twenty to twenty-five pounds of meat per day for forty hens" while Mr. Aldrich writes of it as being "rather loud." That great power of opinion and heavy weight with the scoring card, I. K. Felch, whacks me in good shape in a letter to the Midland *Poultry Journal*, which I have been kindly asked by the publishers to reply to, and the December number will contain a few thoughts on this point. The fact is, gentlemen, that's a fact. I might say, of course, that when that article was written, the hens were moulting fast, and the meat went into them by the bushel, so here is another loud remark. Within the past few days an experiment has been practically made, and this is another fact. I have some Light Brahma hens that will take a pound of meat each day for weeks, and not wink at it, but rather will look around for several ounces more before roost time. They will eat fully double of meat than of any other kind of food. Have tried it lots of times. It is simply astonishing what they will stow away when they have all they want. And here is a very important point. The more they get the less eggs that are laid, and the more fat you have. A hen will grow fat very much quicker on meat than on corn, and it is only by close practice and experience that the amount can be regulated to get the best results therefrom. In getting at the right quantity I have had them tumble over frequently with apoplexy. Don't intend to have any more so. But everything is not plain sailing when feeding meat. It has to be learned how to do it. My flock of over 200 old hens and pullets are now (November 8th) getting about fifty pounds per day. This is hardly enough, but as the pullets are coming on very fast, the first one having laid on September 1st, when only a little over four months old, and the old hens are about done moulting, it requires care to have them lay well all winter and not to allow any fat to accumulate. Have had new pullets egg-bound for weeks, and did not know what was the matter. I don't want any more. An "egg bound" hen or pullet can be easily relieved, and the trouble overcome in a few days, but it's an easier matter not to have them that way. And I'm for "saving of labor" you know.

And here is another important point in this direction. Quite a number of readers have written me as to the bone cutter I use, and to them and others I wish to say that if you want a labor saver, and one which will give you very little trouble in running and keeping in order, and will cut up a pile of bone in a very short time, by all means get a "Mann bone-cutter," made by F. W. Mann, of Milford, Mass. Don't see how this cutter can be improved, and it is a great pleasure to run it. I would not try to keep more than a dozen hens for a month, without a "Mann Bone Cutter." This machine gets my unqualified endorsement, and is an absolute necessity on any poultry farm. Get one of the machines, Mr. Aldrich, and follow out my plan of feeding and managing hens, and you are sure to live a long life and die a happy old man.

Mr. Kinney, in the above, advises against getting the hens too fat, and says that meat may cause the hens to become overfat if not fed with discretion. This is true, but, fortunately for us, we have always suggested that *fat* meat be avoided. Unless the meat is lean it will not accomplish the purposes expected.

WINTER FOODS.

The hens are partial to a variety of food, which is an advantage to the farmer, as it gives him an opportunity of feeding many substances that are unsalable in winter. The supposition that poultry must be fed entirely on grain has entailed a greater expense in keeping poultry than is necessary, to say nothing of the fact that the production of eggs has been diminished, rather than increased, by feeding the fowls so largely on grain.

The hen is, like the cow, a producer, and she is capable of utilizing many kinds of food. This should be apparent to all from the fact that an egg is composed of nearly all of the elements that are required to form a complete substance, or to produce a living creature. If the hens had no duty to perform but that of simply existing and fattening, grain would supply them with all that they require; but, as stated, the hen is a producer, and she must be given suitable foods for her purpose, or she will fail to accomplish the objects for which she is intended on the farm.

No farmer would expect his cow to thrive on a diet of grain exclusively. She requires bulky food, and she requires a variety. Not only is she allowed an abundance of nutritious hay, but also carrots, turnips or ensilage, the object being to promote the appetite and assist digestion, as well as to allow her a greater opportunity of securing the nitrogen, carbon and mineral matter which is so essential to milk production.

There is no difference between the hen and the cow in their demands for food. The hen requires bulky food, and she will eat the same kinds that the cows receive if such foods are cut very fine. A mess of hay will be eagerly devoured by a flock of hens, and it will be of greater service for producing eggs than corn. Farmers know that their fowls will sometimes refuse to eat corn or wheat. It is because they have been surfeited with such food. When the food is varied the hens will have good appetites, and, as the appetite influences egg production, the feeding of a variety is more important than quantity.

Only a few years ago, had the feeding of hay to poultry been suggested, it would have created a surprise, but in experiments made it has been discovered that clover hay can be used to form a large portion of the ration in winter. The hay is cut very fine, not exceeding half an inch in length, scalded or steamed, and fed once a day. If a small proportion of cornmeal and bran is sprinkled over the cut hay it will be an improvement.

Clover is not only highly nitrogenous, but is rich in lime, a substance required by the hens for providing the shells of eggs, and which is in a more soluble form in the food than in the shape of oyster-shells or other insoluble substances. It contains nearly thirty times as much lime as does corn, and is about equal to corn in its proportion of flesh-forming elements. One of its advantages as food for hens is that it is not only nutritious but bulky, and aids in the digestion of the grain. It is valuable in supplying those substances which are lacking in grain, and as it is plentiful on all farms, and requires but a few moments for its preparation, there is nothing to prevent its use. By allowing a ration of scalded clover to the hens after green food is gone, they will keep in better laying condition and the production of eggs will be increased.

DUCKLINGS FOR MARKET.

The hatching of ducklings is one of the leading industries on Long Island. Duck farms like those of Hallock & Son, at Speonk, and Wilcox Brothers, at Centre Morriches, are capable of turning out 20,000 young ducks in one year. The heaviest work is done from January to April, beginning as soon as the ducks commence to lay. The highest prices are secured in May, but prices are good from April to July. All of this work is done with incubators. In fact, if these operators had to depend on hens or ducks to hatch out the ducklings, they could not do anything at all. The Hallocks use twenty-six large incubators, and they pay an expert manager a large salary to attend to the hatching. Such business is not entrusted to the knowledge of an ordinary farm-hand, for the best success is obtained only with care. The manager does not depend on the regulator of the incubator to do what he should do, but gives the hatching his personal observation at all hours, and he is always found near the incubators or brooders.

POULTRY-HOUSE FLOORS.

We are often requested to state which kind of a floor is best for a poultry-house. This depends on circumstances. If rats are numerous, a concrete or cement floor is best. If the location is damp, a board floor is best, and if dry dirt is plentiful, an earth floor is best. In fact, the kind of floor is not so important as the material that is to be used on the floor. If the floor is kept covered to the depth of four inches with leaves, cut straw, cut hay, or any other suitable material, it will matter but little how the floor is made. The hens will occupy themselves with litter and keep themselves busy, and all hard foods should be thrown in the litter during cold or wet weather, or at times when the hens cannot enjoy themselves outside. The litter will keep the floor dry, make it more comfortable by shutting off drafts, and render the work of cleaning out the house less difficult. Litter must not be allowed to become filthy, but should be renewed frequently, so as to avoid dampness and disease, and also retain warmth and dryness.

EXTRA LARGE STOCK.

It is not an easy matter to secure extra large size and prolificacy in the same breed. When the breed is bred with the view of adding to its weight, there is then a tendency to convert the food into meat, rather than into eggs, and when a large fowl is fully matured, it is liable to become very fat, and laying is then retarded. The medium hens of any breed are the best layers. A Brahma hen weighing not over six pounds will prove a better layer than one weighing eight pounds, and the reason is very simple to understand, as the smaller hen is more active and is a better forager than the larger one.

Nor is it any advantage to produce extra large birds for market, as buyers prefer small carcasses. A bird weighing only five pounds will sell more readily than one weighing eight pounds, as the smaller weight is about that required for a small family, and if for large families a pair is usually purchased. That the market prefers a small and plump carcass to a large one may be demonstrated by visiting any of the stalls in the markets of the large cities where poultry is sold in large numbers.

SWELLED HEADS AND EYES.

We receive more inquiries in regard to this trouble than of any other disease afflicting poultry. When a hen is on the roost at night, and a cold draught of air comes down over her, as is usual with ventilators, the result is swollen head and eyes. If a draught, or even a slight current, comes in through a crack or knot-hole, the side of the face next the crevice will be affected. This explains why it is usual to find only one eye swollen, and the cause of the ailment may be a hole no larger than a pin-head. As the bird suffers pain it will change position on the roost the next night, exposing the other side of the face in order to relieve the one affected, and the result is that both sides of the face are in the same predicament. The first duty is to search for the cause. The next is to anoint the face of the bird with something; glycerine, melted suet, vaseline or sweet-oil will answer, but the usual remedy is a mixture of one part spirits of turpentine and three parts sweet-oil, a few drops being rubbed on the face and eyes twice a day. If the birds do not quickly recover, it is better to destroy them than to waste time and labor on them.

BREEDS FOR LAYING.

The breeds that lay the greatest number of eggs in a year could not well be named, as a breed that may do well in one section, and in the hands of one who understands how to manage them, may utterly fail under some other person's control. All the breeds are favorites with those who have their selected kinds, and any attempt on our part to claim that a breed was more meritorious than the others would result in a strong protest from those having different breeds from the one chosen. If records could be given of the largest number of eggs secured from a great many flocks, it is safe to state that each breed would be found to have excelled and also to have failed. Make your choice of a breed, and you will find it to have its drawbacks and its advantages.

It is an impossibility to secure what you want, except at some sacrifice in another direction. The climate must be considered, as there are breeds that will endure a severe winter, while others will give excellent results from spring until the fall.

HOW TO CATCH A FOWL.

The following useful advice is taken from *The Kansas Farmer*: Few persons know how to secure a fowl to advantage. Never seize a fowl by the tail, if a fine bird, nor touch the back, but grasp both legs at once with a firm, tight, quick hold, and then raise free from the ground or perch and hang the body down clear of any obstacle. This method does not ruffle the plumage or turn a feather, which in a fine bird must be avoided. When the web of the feathers is once broken it can never be united again, and where much handled this often occurs, giving to the bird a ragged appearance. It is the source of much annoyance to a nice, clean, smooth bird to have the plumage ruffled. Their bodily covering is regarded with the utmost care and the lustre and beauty of it indicates the health and strength of the fowl.

SEND two stamps to P. H. Jacobs, Hammanton, N. J., and get plans for an incubator.

WHERE THE PROFIT COMES IN.

When the hens are laying they will not fail to give a profit, as no amount of food eaten by them will equal the value of the eggs produced, whether the price of eggs is high or low. It has been estimated that if a hen lays one egg in a week she will pay for the food she consumes. This means fifty-two eggs in one year, or a fraction over four dozen. Allowing for the high prices obtained for the eggs laid during the winter months and the low prices of summer, the average may safely be fixed at twenty cents per dozen, or eighty cents as the receipts from a hen that may lay one egg each week in the year. It is considered, however, that in the fall of the year, when the hen is molting, she may not lay any eggs; but she will lay more eggs at other times, and thus balance the production.

It is allowing but few eggs as the production of a hen during a whole year when she is credited with but four dozen; but the object of this article is to draw a comparison between the production and cost. Estimating that the eggs for fifty-two weeks in the year are valued at eighty cents, as stated above, she must not be credited with over eighty cents a year if the feed account is not to exceed the receipts from eggs. It is estimated that five pecks of corn, or its equivalent in the shape of some other kinds of food, will maintain a hen one year. This may cost more than eighty cents, or less, but if the feed is high the prices of eggs will be correspondingly higher; and as the hen requires but little assistance in the summer, the production of four dozen eggs per year, or about one egg per week, should pay for the food.

But the profit depends upon how many eggs above the one allowed to meet costs can be secured. If three eggs are produced each week instead of two, the profit will be doubled, as the first cost will always remain. The forcing of the hens, by the use of meat, milk and bones, may increase the cost, but it will also add to the production of eggs, and a gain of only one egg a week makes a large difference, even if but for a portion of the year, as an average of two eggs per week for each month is not a poor record for the individuals of a large flock.

OLD HENS FOR BREEDING.

We do not consider it best to always replace old hens with pullets. It is true that early pullets give better results than old hens as a rule, but this is due to the fact that old hens fatten more readily than pullets, and are often not in proper condition for laying. A hen is not really old at two or three years of age, and with good management such hens will lay their full quota of eggs until four or five years old, and some of them will go beyond that limit. If there are a few choice hens in the flock we believe it will be an advantage to retain them for breeding purposes rather than to use untried pullets. It matters not whether a hen is large or small, old or young, black or white, if she produces eggs for market regularly, but if eggs are to be saved for hatching, the age should not be considered. It is proper to try and breed from the best of the flock, and when you have a hen that shows superiority as a layer, keep her and mate her with a male from some good breed that is suitable for your purpose.

INCREASE IN WEIGHT OF DUCKS.

The rapidity of growth of the Pekin duck is almost marvelous, and to one accustomed only to the keeping of the common puddle duck, the claims made in behalf of the Pekin are subject to doubt. Using ten ducklings for the experiment, we weighed them carefully. When just hatched, the ten ducklings, together, weighed exactly one pound. When one week old they weighed two and one-half pounds; at two weeks old they weighed four pounds; at three weeks, seven pounds; at four weeks, ten pounds; at five weeks, seventeen pounds, at six weeks, twenty pounds, and at seven weeks, twenty-five pounds, or two and one-half pounds each. Some of them were short on weight, while some weighed three and one-fourth pounds each. At eight weeks the largest weighed four pounds each.

BONES OR OYSTER-SHELL.

It is difficult to procure oyster-shells, except at a greater cost than is desired, by those who live far from the sea-coast. Oyster-shells do not possess much value, as they are more useful as grit than otherwise and as pounded glass, old china or sharp gravel are fully as useful, shells are not essential. So far as providing lime for the shells of the eggs is concerned, bones are better than oyster shells, as bones are more digestible than shells, and contain lime in a more available form for the purposes desired.

Ground bones and cut bones are different. A fresh, green bone cannot well be ground. It may be crushed or pounded, but not easily ground. Hand-mills are in use that permit of grinding bones that have become hard and dry, or have been steamed or heated, but the green bones must be pounded or cut in fine pieces with knives. There is a great difference in the value of fresh bones from the butcher and those that have been exposed until they are dry. Green bones contain quite a proportion of meat and cartilage, and are greedily eaten by all classes of fowls.

LIME FOR ROUP AND GAPES.

Turpentine will destroy the germs of roup, and it destroys the gape worm. Lime will do the same thing. Both articles are cheap and easily handled. Roup germs are difficult to kill when they are in the ground, and it is not an easy matter to apply solutions to the soil, unless every portion of the soil is saturated, while the expense of so doing is quite an item, but lime may be broadcasted over the yard daily, and in a few minutes. The best preparation is to add a pint of spirits of turpentine to a peck of fine, dry, air-slacked lime, and incorporate the two substances well together by rubbing. Now add the peck of prepared lime, mixing well, to a bushel of fine lime, and place it in a barrel, in a convenient place, under shelter. Every night, just as the hens go on the roost, dust the prepared lime freely and liberally over the walls, roosts, nests, floor, and make all the dust in the house that you can. Next, dust the yard also. You will do more to cure roup and kill lice than by any other method of the same cost.

DRY FOOD FOR CHICKS.

Dry food is the best for chicks. Many are killed by having too much wet food. They require very little water, but when the food is damp they are compelled to swallow more water than is beneficial. A leading poultryman has claimed that he could raise more chicks by withholding water altogether than by giving a full supply, but we have no doubt the loss was occasioned more by the water being given in vessels that permitted the chicks to get wet rather than from the quantity consumed. The best results, however, have been obtained from dry food. Cracked corn, wheat, ground oats and even the dry ground meat has been tested with successs. Such food may be placed in a small trough, from which the chicks may help themselves and it has the advantage of being less liable to ferment and spoil than when wet. The better way of feeding, however, is to feed at regular intervals, in order to afford a greater variety and avoid waste.

HENS AND BROODERS.

The hen can well provide for her brood in the spring, when the weather is mild, but at this season a hen with a dozen chicks requires as much care as a brooder holding one hundred chicks. The work on the brooder is done under shelter, and the operator is in no manner exposed. The hen will lose nearly all of her chicks if allowed to do as she pleases with them at this season. The winter is not really the proper time to set hens; they will hatch well enough, but as the chicks grow the hens cannot hover them, and they gradually droop and die. With the brooder any amount of heat may be given the chicks, and it is only a matter of attention on the part of the attendant whether he succeeds or not, for large numbers of chicks entail more work than is usually bestowed

POULTRY-HOUSE VENTILATION.

It is a very difficult matter to ventilate a poultry-house without causing draughts of air on the fowls at night. The proper mode is to keep the poultry-house clean, leave the doors open during the day, and shut the house at night, allowing no ventilation at all. We have found that it is very difficult to keep the fresh air from coming in, and it is a fact that many who take pains to render the poultry-house warm and comfortable, by stopping all cracks and crevices, and by lining the house with paper, make a hole in the roof or gable ends which they style a "ventilator," and thus let in more cold than they desire. There is not as much foul air in a poultry-house as may be supposed. The severe cold renders all gases heavy, and less volatile matter exists. Fill a poultry house with smoke, and close the door; then step outside and notice where it escapes. You will at once be convinced that you need no "ventilator," and that despite all our precautions, your house is full of air holes that you cannot easily close, and that your birds are liable to roup and other diseases, due to cold draughts of air over them at night.

WATERING THE HENS IN WINTER.

Unless the hens can have plenty of it, they cannot produce eggs. In the winter season, when the drinking vessels become frozen up with ice and are liable to crack from cold, the matter of providing water becomes a difficulty. We all know that a cold draught of water in winter chills the body, as it must be warmed by the body after it is drank; consequently, ice water causes a loss of bodily heat. As the heat is produced from the food, all losses of heat are losses of food. Now, it is just as easy to water the hens at regular hours as it is to water the large stock, and the best mode of so doing is to use wooden troughs long enough to allow all the hens to drink at the same time. Early in the morning, at noon and before night, fill the troughs with warm water, allow the hens to drink until all are satisfied, and then throw out the water that remains. In this manner the troughs will be kept clean, the hens will learn to drink at regular periods, and the warm water will invigorate them. In fact, nothing is so invigorating, or will assist in warding off the cold when the hens come off the roost in the morning, with the thermometer below zero, than a drink of warm water.

BALANCING A RATIGN.

If farmers would aim to give only that which is absolutely essential, and avoid waste, a large saving would result. The equalizing of the flesh-forming, heat producing and mineral foods, so as to secure the greatest gain at the least cost, is a matter requiring judgment, and it is the duty of the farmer to learn how to exercise judgment in feeding. Then, again, the ration may be balanced according to the object to be accomplished. The laying hen, the fattening hen and the growing chicks will not give the same profits on food that is fed to all alike. If too much protein is given the hen that is to be sent to market, there will be a loss of food; and if the laying hen is supplied with food rich in fat or starch, but deficient in protein, there will be fed an excess of starch, and the food is expensive because the hen has no use for it; if anything, the fat accumulates on her body by reason of having received an excess of starch food, being detrimental. It is not expected that farmers can draw the line so closely, but they should avoid feeding foods that induce the formation of fat unless the fat is desirable.

DON'T BUY DISEASE.

It is the easiest matter to get roup into your flock when you buy a bird from another yard. If you wish to purchase, it will pay you to inspect the flock from which your purchase is to be made, and if you buy from parties at a distance be sure that they are reliable, and insist on a written guarantee against loss from disease should such purchased bird be unhealthy. Lice is carried from one flock to another by purchased birds, and diseases are also spread in the same manner. One cannot be too careful.

BROODER-HOUSE DESIGNS.

During the past four years over one hundred illustrations of poultry houses and brooders have been given by us, they being designs by experienced persons from all sections of the United States. We have paid special attention to designs of brooders, of which about thirty have been given. During the past year we illustrated some excellent poultry-houses and brooders, and in so doing we aimed to present only those that were practical. We have given but little attention to expensive or elaborate styles, preferring to please the mass of the readers by illustrating something that will be within the reach of all. We wish to state, in reply to inquiries, that no designs of brooders or incubators illustrated by us are patented unless so stated. Everything is free to all.

HOW MUCH LAND?

We are asked how much land is required in order to make a living from the poultry business. It is estimated that one hundred hens are sufficient for one acre of ground. A great many persons keep a larger number of birds on that area, but it is best to give plenty of room. It is difficult to state how much land is required in order to make a "living," as the sum sought for that purpose depends upon the number of persons in the family and their frugality. A five-acre farm should pay if devoted to poultry by an experienced person.

BEGIN THE NEW YEAR RIGHT.

No correct knowledge of the results of your operations can be obtained unless you keep an account with your flocks. There are hundreds of little items which assist in increasing the expense, but which would be unnoticed but for showing on the books. When strict accounts are kept, economy will be practiced, for no farmer or poultryman will add expense in his management when he knows that a loss is certain. Do not forget to keep an account, also, of the poultry and eggs used by the family and of the eggs used for incubation, as the hen is as justly entitled to the credit of supplying the home market as any other. Above all, begin the new year with a resolution to improve the flock, and do not hatch any chicks unless you aim to have something better than those you have. If this one object—improvement—was kept in view always, it would add many dollars to each farmer's pocket, and it is more important with poultry than with other stock, as the fowls mature early and become producers the first year.

HATCHING TURKEYS IN INCUBATORS.

Can turkeys be hatched and raised in an incubator and brooder? We reply that they can. A reader asks several questions in this respect, which we give below. He says:

"Can turkeys be hatched in an incubator, and what per cent. are at a disadvantage compared with chicks in raising them?"

We once tried the experiment, but hatched only a few. They were very dainty and would eat nothing unless it was *white*, such as the white of eggs, bread soaked in milk, curds, etc., and they had to be fed *every hour*, from early in the morning until late. Onion tops, lettuce and hominy were eaten. Not one died, but they were kept very warm and dry and were not let out of the brooder house until six weeks old, and then only in a small yard. When ten or twelve weeks old, having become well feathered, and passed the stage of "shooting the red," they were given their liberty, but they would seldom go far from the brooder house.

HOW TO FEED LAYING HENS.

In the first place, do not overfeed. Bear in mind that if a hen is to keep in laying condition she must have exercise When you feed grain, do not put it in a trough where the hens can stand and eat their fill, but scatter it far and wide, as the hens will find every grain. If the snow is on the ground after the cold season sets in, throw the grain in leaves or cut straw, so as to keep them busy. Do not feed grain exclusively, but give a variety. Allow ground meat, or meat and bone fresh from the butcher three times a week. Vary the grain, feeding corn, wheat, and oats, and give cabbage, cooked turnips, clover leaves, or any other food that the hens will eat.

A POINTER ON ROUP.

Much has been written concerning roup and innumerable sure cures are to be found in the poultry press; yet notwithstanding this roup comes around year after year, in its various forms. Very few breeders escape a touch of the disease among their fowls. I do not think that we quite understand the system of housing and ventilation, roup is caused almost entirely by drafts and improper ventilation.

WHAT IS ROUP?

Roup is an inflammation of the mucus membrane of the head and throat. If allowed to run along it will pass from one stage to another until it has become chronic and very difficult to cure. Again there are different forms of roup. The most essential thing of all is to keep fowls in a dry and temperately warm apartment. Even in its mildest form roup must be given heroic treatment. Roup begins usually by a running of the nose and a rattling in the throat, sounding like a person trying to get a bone out of the throat. In the September issue I gave a remedy that will be found more or less successful in the cure of this malady, *i. e.*, Loyd's Hydrastis, which can be used in the colorless, or dark fluid extract.

When roup passes from its first stage the discharge from the nose becomes very disagreeable to smell, the discharge changing from a watery color to a thick yellowish color.

HOW TO DOCTOR AND WHAT TO GIVE.

First wash out the mouth and head with warm water; get from your druggist a Devilbis spray atomizer, and in the spray put the following mixture: Oil vaseline, one ounce; thymol, half dram; oil eucalyptus, twenty drops; aristol, twenty grains. Mix together, put in the atomizer, and warm according to directions on the box; insert the point of the atomizer first into the slit in the roof of the chicken's mouth, spray well, holding the bird quiet; then turn the point of the atomizer down, so as to spray all over the throat; do as often as is found necessary; several applications will always cure severe cases.

Another good remedy is colorless hydrastis, pinus canadensis, each one ounce; aristol, twenty grains; water, one ounce. Mix, to be used in spray. Both of these preparations are good and reliable, and one or two applications in the first stages of the disease will arrest further development of the disease by allaying all irritation and forming a coat to the mucus membrane. Besides this treatment treat as you would for a heavy cold, giving first a purgative, then a five grain capsule of quinine and dovers powder; do not be afraid that the dose is too large; it will not hurt, as a fowl can take larger doses than a person. Do not fool with homœpathic bosh if you value the life of your fowl; these remedies are intended for the bloated aristocrats, ladies and children.

Be very careful of the following remedies that are constantly recommended, such as carbolic acid, turpentine, coal oil, etc. For internal use they are very injurious, and should be used with care.

ABOUT DISINFECTING.

In all the water given to your chickens, where there is any sign of disease, put in enough permanganate of potash to color the water a pinkish, or slightly redish color; it is harmless and tasteless, and a killer of all germs of disease and much preferable to Douglass' mixture (copperas water) as a disinfectant although a good tonic used judiciously. Roup spreads among fowls by the afflicted ones drinking from the same water fount, the mucus mixing with the water.—*G. D. Johnson, in Southern Fancier.*

FATTENING TURKEYS.

A writer in the Germantown *Telegraph* furnishes that journal with the following statement: Much has been published of late in our agricultural journals, in relation to the alimentary properties of charcoal. It has been repeatedly asserted, domestic fowls may be fattened on it without any other food, and that, too, in a shorter time than on the most nutritive grains. I made an experiment, and must say that the result surprised me, as I had always been rather skeptical. Four turkeys were confined in a pen, and fed on meal, boiled potatoes and oats. Four others of the same brood were also at the same time confined in another pen, and fed daily on the same articles, but with one pint of finely pulverized charcoal mixed with their meal and potatoes. They also had a plentiful supply of broken charcoal in their pen. The eight were killed on the same day, and there was a difference of one and a half pounds each in favor of the fowls which had been supplied with the charcoal, they being much the fattest and the meat greatly superior in point of tenderness and flavor.

WARTS ON CHICKENS.

Correspondents of *Home Journal* give the following remedies: "Dissolve blue stone in water, cut the wart off, and with the knife scrape out all the seed that can be taken out, then with a mop apply the liquid blue stone. If taken when the wart first appears the above remedy will make a cure. Use as often as needed, as more than one application may be necessary." Another is: "Rub carbolic acid freely on the warts of the chickens about twice. Use clear, purified carbolic acid, and unless the warts are different from the Texas style, they will not wait to make a second."

CHICKENS AS SCAVENGERS.

An experience of fourteen years with chickens leads me to the conclusion that they, as scavengers, have more good qualities than any other of our domestic animals says a correspondent of *Country Gentleman.* In every house which is the home of an average family there is enough waste from the table to keep from ten to twenty chickens, when in addition they can have the run of an orchard or a garden. There will be times when grain may be added to advantage, but where, as is general with us, every village home consists of one acre of ground. it is easy to see that the insects, seeds, etc., that will be found provide good meat and grain rations. The table scraps consist of grain in the form of bread, mush, etc., fruit peelings and cores, meat and bones, milk, etc. These afford a variety that is ample for good health, steady growth and profitable laying. Many families will keep a pig rather than chickens. Where the home grounds are quite small, the division fences cheap, low and open, and garden truck is wanted, then the pig may be the most useful. It is always desirable that the kitchen wastes be disposed of effectually. If they are thrown in the back yard or in heaps at a greater distance from the house they are sure to decay, and may be a source of troublesome diseases. If, therefore, seems the part of wisdom to dispose of such materials where they will be deprived of any evil tendency, and converting them into edible meat, either poultry or pig, is an easy solution. My reasons for preferring chickens to pigs are that they require less waiting on, they are more cleanly, their products are more healthful, and generally the profit is greater. The pig is a good deal of an aristocrat and must have his servants carry all his food to him, while chickens are not above going where the meal is. Unless the pig is carefully cleaned and bedded his pen is always offensive, while a very little attention will keep the coop presentable. Where the housekeeper will not waste time in picking up all the crumbs from the floor and scraping the dishes absolutely clean, the sweepings and dishwater will carry many scraps to the yard. After the chickens once learn where those bits are likely to be they will expect them and clean all up thoroughly without any trouble on your part. This hunting over all parts of the ground and eating everything that would otherwise be wasted and produce offensive odors, if nothing worse, makes the chicken a valuable ally in the sanitary work of every rural home. And when we consider the diligence and persistence shown in clearing up all waste material, the quiet way in which the work is done its effectiveness in keeping our premises, pure and the profitable returns in the way of eggs and meat, we must conclude that our chickens have by nature been endowed with those characteristics that make them very effective scavengers, and, therefore, our good friends.

A SURE WAY TO KILL LICE.

Not a winter passes on any farm without a need af some effective way of killing lice on colts, calves, pigs and chickens. We who have kept house with children, cats and dogs about us have had some experiences along this line that are not to be mentioned among our friends, although we know they know all about it.

A thousand and one remedies are known for lice, all more or less simple, and some of them dangerous to the subject as well as to the parasite. Of all these various cures not one is so cheap, so well understood by the people, so certain to get in its work as tobacco. It may be tobacco stems, leaf tobacco, plug tobacco—in any shape, provided nicotine is in it.

How to prepare it for use and to treat the unhappy subject is simple, without the least mystery, unaccompanied with danger or uncertainty, provided it is done with thoroughness. It is best to reduce it to a liquid form. The amount of tobacco to use must depend upon circumstances, the number of animals to be washed; for this is the whole thing to be considered in treating animals for lice. A thorough washing with a tolerably strong decoction of tobacco will kill every louse and nit on an animal. The fences, sheds, racks, mangers, bedding and wherever they have been left by the animals should receive a thorough clearing up and washing with tobacco, or the work will have to be repeated in a short time.

It is not necessary to boil the tobacco to get the full strength. The fact is, boiling sets the nicotine free, and hence soaking in soft, tepid water for twelve hours is quite enough. Tobacco is good for the skin and hair. I have known school children to use it. Poultry are cured by simply dipping them in the decoction, putting under head and feet at the same time.

It need not be used when cold, as it is calculated to chill more than is necessary. Choose a bright, sunny day, and do it in the morning. After years of experience I look back with wonder and regret that coal-oil, turpentine, sulphur and lard, mercurial ointment, fish-oil and everything else that was suggested should have been tried on colts, calves and pigs with so little satisfaction. The cruelty in treating poor, thin colts with coal-oil and turpentine that took off the hair, blistering the skin, is to be regretted and condemned with our present light upon the subject.—*Cor. Farm and Fireside.*

MATING ROUEN DUCKS.

The mating of Rouens to breed prize winners is a much more difficult matter than mating any other ducks. They are parti-colored birds, and each color and shade must be strictly considered. Here we have all the difficulty experienced in breeding prize Hamburgs or Brahmas. The pen which will breed good show drakes cannot be depended on to breed first-class ducks. Here the breeder's skill is a necessity.

From a prize pair no doubt good birds may be bred, but the probability is that the drakes will not be the same shade as the old bird, nor will the ducks likely follow their mother. This is one of the evils the fancy has wrought. I am aware that very few Irish, or perhaps English, breeders keep a duck and drake breeding strain; they may not, in fact, be such a term at all applied to ducks, yet it almost amounts to this.

To breed show drakes a show drake must be had,, and ducks, of course, very large and not particularly dark must be mated with him. Then to breed ducks, show ducks should be mated with a rather dark colored drake, with the line down his back almost black. The claret breast must be very dense and the under parts dark. The only difference in the matings is in the shade of color in both sexes. The markings must be clear and distinct. I don't believe in breeding drakes from badly marked ducks, but I like the ducks just a shade lighter than exhibition birds, and to breed ducks I like the drake a shade darker than those required for exhibition.

A show drake should have a greenish orange bill tipped with black bean, a long, broad, rather flat bill in a straight line with the head. The head is large, and a dense green black, the neck is long, carried rather erect, surrounded on the sides and front with a neat, white ring, which should be as even as possible, and not over three-eights of an inch wide (quarter of an inch looks better). At all events, a broad ring should be avoided.

This ring separates the green neck from the claret breast, which should be a dense deep claret from the ring well down, and quite free from white in any feather or penciling. The flank should be a bluish grey, distinctly but closely penciled with black, and it should free from rust. This color goes well up to the stern, and black tail, coverts and quills.

The back should be a rich green black, the wing coverts a clear grey, and the pinion coverts slaty black. The wing bar is very beautiful; it consists of a rich irridescent blue centre bar with a narrow black bar on each side, and a white bar outside each black one. He should be long, broad and square, deep in keel from front to stern, he should be about nine pounds or ten pounds, and about thirty-five or thirty-six inches long. The duck is similar to the drake in general outline, but differs greatly in color. The down, for instance, is black brown, and the upper ground color a dark chestnut, each feather being doubly penciled with golden brown. The head and neck are brownish grey, with two light brown lines running from the bill to the eye. The wing bow is dull brown, penciled with gold. The wing bar and flight feathers similar to those of the drake. She has no white ring round the neck. When this occurs in ducks it shows they are cross-bred.—*Breeder in English Poultry Yard.*

OWLS AND HAWKS.

Farmer's poultry yards are often subject to the ravages of owls and hawks. Some knowledge of the habits of these depredators is of value in helping to devise means for their extermination. An old sportsman says that both owls and hawks devour their victims, feathers and all, and the feathers being indigestible, are rolled up in balls and voided. By watching for these evidences of their roosting places in forests the vermin may be trapped or shot, as they go to the same place to roost every night. As for hawks they may be caught nearer home. A hawk, just before swooping down on its prey, selects some sightly place from which it can discern any possible danger. By placing a strong steel trap just where the hawk is accustomed to light he may be captured and killed.

FEEDING DOUGH.

There is one point not to be overlooked in feeding dough, which is that unless it is soon passed from the crop to the gizzard it will ferment. Corn meal dough, being more crumbly than that prepared from a mixture of ground grain, is more readily divided, by muscular contraction, in the crop, and is soon forwarded to the gizzard for reduction, but when the dough is very glutenous, and of a sticky, pasty mass, it is one of the most undesirable substances that the birds can feed upon, as the food cannot be readily passed into the gizzard by detaching portions from the whole, and the result is hard crop (or crop bound), fermentation of the mass results, and may end in death. All foods for fowls should be fine and easily divided, as in the case with grains or the brittle corn meal dough. It is better to feed wheat than to grind it. Bran and meal, mixed, are excellent, but such foods as middlings should never be used in the raw condition, though they are excellent when cooked.

SEBRIGHT BANTAMS.

This is indeed a very pretty variety of Bantams, and one which catches the eye of even the general public at our shows, but not at all suitable for fanciers living near a town or factory, the smoke taking away more than half their beauty. They owe their name to the gentleman (Sir John Sebright, Bart.) who produced them, and have now been in existence nearly a hundred years. There are two kinds, the silver and the golden, the former more often seen than the latter which are getting more rare every year. The reason I account for this is owing to the unfertility of the eggs, and the difficulty in producing a good bird having a well marked breast, body and tail, a thing seldom seen; several birds I have particularly noticed this last season have been remarkably good in breast and body and very fair in neck, but the tail has invariably been cloudy, while some have been much too dark about the brow and higher neck feathers.

The cock should be hen-feathered throughout, viz., quite destitute of sickle feathers, and the hackle and saddle feathers same as in the hen, for the show pen, but for breeding it is better to have a cock with the two top tail feathers a little inclined to be sickles, as the fertility of the eggs is to my mind often increased by this method; again, a heavily laced cock should be matched with fine laced hens, or a fine laced cock with heavy laced hens, as these will produce far better birds than from equally laced birds mated together.

The color of the comb, face, and wattles should be deep bluish purple or livid color (in both sexes). The ear-lobes I should much prefer if free from white, though a great many winners possess a little. I am sorry to see a lot of the birds exhibited with bright red combs, face, and wattles instead of the proper color which should be kept, as it is one of the principal characteristics of the breed. The shape of the comb both in cock and hen should be rose, and as near the shape of a good Hamburgh's as possible; most of the winning cocks lately have far too coarse and big a comb.

The ground color of the silvers should be a pure silvery white throughout and quite free from any creamy tinge, and the goldens a rich gold-like bay, of a medium shade, but rich, often a trifle darker on the secondaries. Legs and feet a good slate color.

The chickens are fairly hardy, but must be kept dry. I always think the most critical time is when they are losing their chicken feathers.

Certainly the safest way to ensure fertile eggs is to mate a cockerel with not more than three hens, and often two would be far safer.—*F. J. S. Chatterton, in Feathered World.*

LAWN CLIPPINGS FOR WINTER.

My front yard, on which I have raised a fine sward of lawn grass, is clipped once a week all summer.

Last summer I used a carrying attachment on the lawn mower, in which the cut grass falls and is gathered in one heap. This grass I dried in the *shade*, and packed it in sacks.

When the snow began to fall and cover the ground last winter I gave my hens a portion of it every day, and was surprised to see them relish it almost like corn, and more agreeably surprised at the increase of eggs they laid even last winter, despite the severe cold weather.

The grass being very sweet and succulent, I believe it makes a very good substitute for cut clover, which is not accessible on a town-lot poultry yard. At the same time a good disposal is made of the grass, which is often thrown away and left to waste.

The hens will eat it up clean as it is free from stem, short, and consists of white clover leaves and tender blades of other lawn grasses. It may also prevent feather eating.—*Farm Journal.*

CASH AND POULTRY.

The production of poultry and eggs is a cash business. True, the farmer may at times buy on credit, but he is never compelled to sell eggs on credit. If prices are liable to fluctuate, they never get below the cost value of the eggs. Eggs can be produced at a very small cost compared with other articles sold off the farm, and they are produced every day in the year. It is the daily returns of cash that give the farmer such an advantage, for while he must wait two or three years for a steer to reach maturity, there is no such delay with poultry, as during such a period several flocks will have been marketed, as well as produced a supply of eggs. The man with limited means, who prefers life on a farm, may never be able to accomplish his desire, but he can begin with a small flock of fowls and gradually increase until he is competent to secure and manage large numbers, the fulfilment of his object being aided by the daily cash returns, which, however small, enable him to keep at the business until he reaches a position from which he can branch out and enlarge. If it were not for the quick returns from poultry they would not be retained on farms at all; but as they keep the egg basket full during winter and summer, they largely assist in providing for immediate necessities.

THE LATEST FROM ATLANTA

A local paper says that the Southern Poultry and Pet Stock Exhibition, to be given in Atlanta, Ga., at the Gate City Guard armory, January 9th to 13th, is attracting a great deal of attention. Local dealers and raisers of poultry and pet stock are making extensive preparation for the show, and are determined to make it the best affair of the kind ever seen in the city.

The exhibits will be confined to no section of the country. Consignments of fine poultry are expected from every section of the United States. Mr. W. T. Levering and other fanciers, of Baltimore, will make a large exhibit, and Mr. J. H. Ambrose, of Nashville, Tenn., treasurer of the Nashville, Chattanooga and St. Louis Railway, will exhibit his famous Plymouth Rocks and Light Brahmas. A large exhibit from the east has been promised.

Mr. P. H. Scudder, of Glen Head, N. Y., will judge the poultry and Messrs. Geo. E. Peer, Rochester, N. Y. and F. M. Gilbert, Evansville, Ind., the pigeons. Mr. T. Farrar Rackham is superintendent. The show will partake of an educational character, and, as such, will be of great benefit to poultrymen. Addresses will be made each evening in the parlors of the armory by the foremost fanciers of America. The following noted fanciers have been invited to deliver addresses, the majority of whom have sent letters of acceptance: Messrs. F. M. Gilbert, of Evansville, Ind.; George E. Peer, Rochester, N. Y.; H. S. Babcock, Providence, R. I.; Theo. Sternberg, Ellsworth, Kan.; P. H. Scudder, Glen Head, L. I., N. Y; I K. Felch, Natick, Mass.

The local management state that some of the finest fowls in America will be seen at this show. Importations from the leading breeders of England are being made, and the winners at the late Crystal Palace Show will be brought to reap honors on American soil. The fanciers of Charleston, S. C, promise a carload of their finest fowls. Mr. J. A. Alwyn, a leading cotton merchant of Charleston, has been importing Langshans for years, and has some noted birds. The premium list, which is very large, is ready.

The officers of the local association are: Dr. T. W. Tuggle, president, Columbus, Ga.; J. Alwyn Ball, vice president, Charleston, S. C.; R. O. Campbell, treasurer, Atlanta, Ga.; H A. Kuhns, recording secretary, Atlanta, Ga.; Geo. M. Downs, corresponding secretary, Atlanta, Ga. Executive committee, B. T. Smith, River View, Ala.; Loring Brown, Bolinghroke, Ga.; R. O. Campbell,s Atlanta, Ga.; Dr. T. W. Tuggle, Columbus, Ga.; Alfred Bertling, Athens, Ga.; William Wilson, Atlanta, Ga.; George M. Downs, Atlanta, Ga.; P. F. Hager, Nashville, Tenn.; H. A. Kuhns, Atlanta, Ga.

HOWARD COUNTY (INDIANA) POULTRY SHOW.

The Howard County Poultry and Pet Stock Association will hold its first annual exhibition at Kokomo, Indiana, January 9th to 13th. The country surrounding Kokoma is one of the greatest poultry producing sections in the west. It is a fact worthy of note by the many breeders of good poultry. That while Howard county is right in that best part of the wheat belt in Indiana, yet the annual shipments of poultry and eggs from Kokomo, exceed her shipments of wheat. The farmers are thrifty and intelligent, and well know that "biddy" pays them a better per cent. on the investment than any other stock or farm product. The only thing now remaining is to show the superior beauty and merits of the pure breeds over the dunghill, and to this end the association was formed, and the annual exhibitions arranged for. With the interest there is, in poultry in the county, no exhibitor who can reach Kokomo at that time can afford to miss it. Mr. F. J. Marshall, of Middletown, Ohio, has been secured as judge, and with his well known reputation as a fair and impartial judge, the association feels that its exhibitors will go away well pleased with the awards. Every bird entered unless disqualified, will be furnished a score card. An entry fee of twenty-five cents on single birds will be charged, and fifty cents additions on breeding pens. A large list of special premiums has been offered by breeders and the merchants of the city. For catalogue or information concerning the show, write the Secretary Mr. J. C. Hoss, or concerning the care of birds, etc., the Superintendent of the Show, Mr. Taylor Jackson, Kokomo, Indiana.

REGULATING THE GRAIN SUPPLY.

Instead of feeding wheat every day the grain may be varied by simply allowing one kind of grain each day. Oats may be given the first day, corn the next, and wheat the next. The cost of food will be about the same as if but one kind is given, but the fowls will enjoy the changes of grain, and keep in better health. If meat, milk, and bulky food are also added to the ration the hens should lay, provided they have warm quarters and are not overfed. Variety should always be the rule, for even the grains differ in their composition, and some are capable of supplying something that may be lacking in other kinds. The hens will nearly always respond when fed judiciously on egg producing foods.

DOMINIQUE LEGHORNS.

A reader at Shreveport, La., asks us about Dominique Leghorns. He wishes to know why they are not advertised, and writes:

"Please inform me where I can get some Dominique Leghorns, and why is it that they do not enjoy the same popularity that other Leghorns do. Are they not equally as good in every particular."

They are rare, but few, if any being bred. It is possible that as but a small number of breeders were interested in them, in-breeding was the consequence, which would tend to quickly exterminate them. There may be some, however, which are as good as any Leghorns, but the brown, white, black and buff varieties seem to have gotton the lead. A breed so rare should not have been allowed in the *Standard* and it would have been wise if many breeds had been thrown out together.

WARMING THE POULTRY HOUSE.

Out in the West the cold is sometimes very severe, and how to keep the house warm is a difficulty. For our part we find it a great undertaking to induce many to first keep the cold out. Mr. J. T. Anderson, of St. Joseph, Mo., sends a letter of inquiry on this point. He says:

"The poultry papers say that the henhouse should never be colder than from forty to sixty-five degrees above zero, yet for grown fowls they don't advise any kind of artificial heat for fear of making the fowls too sensitive to the cold. Now, how can one keep his hen house from forty to sixty-five degrees this kind of weather, and during the winter season without heat or a fire? My house is as good as any in the country, double wall, with tarred paper between, and air-tight, save the square box ventilator extending one foot above the floor up through the roof, and yet their drinking water will freeze one inch thick over night in this house. Now, do you advise stopping up the ventilator completely in the winter time, and could my fowls then secure enough air? Also, would you advise any kind of a stove, say one of Rudd's, of Boston, for heating a hen house during the cold weather?

What is the cause and cure, say when a cock can't crow without a severe effort, and even then the crow is very slight?"

If Mr. Anderson will pardon us for being somewhat emphatic in our reply we will state that we cannot understand why any one should go to the expense of using double walls and tarred paper to keep the house warm, and then have an upward current from the floor to cause the cold air to rush in that the vaccuum may be filled when the warm air goes up the ventilator.

Again, ventilators do not always carry the air *upwards*, whether the ventilator is situated at the top of the house or within one foot of the floor, as something depends on the *direction of the wind*, and the cold air is just as readily admitted by the floor ventilator as by the one at the top.

It is not profitable to heat a poultry house for a small flock, as a stove will burn nearly as much coal, and require as much labor, for a hundred as for ten fowls. If ventilation is needed open the door and window when the sun shines in the house. Close the ventilator. Try to keep the cold air out. Do not be afraid of foul air. More birds die from fresh (cold) air than from foul. The fact that there is a draught of air from the floor ventilator is shown by the cock that is mentioned as too hoarse to crow.

The cheapest mode of warming a poultry house is to hang a stable lantern in it, or use a small stove. Do not be afraid of *suffocating* them. You cannot do it if you desired. You cannot get fresh air from the outside and have *warmth* at the same time, and the hens cannot breathe the air faster than it will come in from the outside. Use plenty of straw to avoid draughts on the floor, and use a lantern with a capacity to hold plenty of oil. Hang it with wire, half the distance from floor to ceiling. In this issue we illustrate an excellent plan for protecting against draughts, retaining the animal heat, and providing plenty of fresh air.

Now, readers, give up this fresh air belief. Keep your hens warm by keeping the cold air out. Pay some one to knock your ventilator (so-called) to pieces and use it for fire wood.

THE HEN OUT OF SEASON.

It is doubtful if it pays to attempt to hatch and raise chicks with hens during the winter season. In the first place, the hen has a will of her own, and does not become broody just at the time most desired. Hens in winter labor under many disadvantages, and cannot undertake the task of hatching a brood except at a risk to themselves. The principal obstacle is the attention required for a hen more than for the chicks, as she is compelled not only to keep warm herself but also to protect her brood. The cost of the food for the hen is also an item, as well as the time lost in not laying. If a number of hens become broody about the same time the cost of the chicks will be much less than when there are only two or three broods, as it requires but little more labor, as well as time bestowed, than for a few. The difficulty is that, as the chicks grow, the space covered by the hen when she is hovering the chicks at night becomes smaller, and some of them consequently become chilled and droop. Hatching with hens in winter should not be attempted without the aid of comfortable coops and runs, which should be under shelter.

FIVE CENTS PER POUND.

Many experiments have been made, and by different individuals, in order to arrive at a correct knowledge of the profits which may be derived from poultry and eggs, and while no fixed sum can be determined upon as the profit to expect, owing to circumstances, all are unanimous on one point, which is that so far as the cost of food is concerned, a pound of poultry or a dozen of eggs should not exceed five cents. The cost of the eggs may reach a cent or two more in winter, but will be much less in summer. The cost of a pound of poultry, even with the heaviest feeding, should not exceed five cents if all other conditions are favorable. In the face of this fact there should always be a profit on the food; but there are other expenses incurred which reduce the profit, such as cost of the quarters and labor bestowed. Five cents as the first cost for the food, however, leaves a large margin for profit.

FEEDING FOR EGGS.

For the production of eggs the food should contain an ample supply of those ingredients that make up the egg. An average egg weighs about 1,000 grains, divided as follows: Shell, 107; white, 604; yolk, 289. The shell is composed of ninety-seven percentum carbonate of lime, one percentum phosphate of lime and magnesia, and two percentum albumen; the yolk of fifty-four percentum water, 28.6 percentum yellow oil, and 17.4 percentum albumen; and the white eighty-five percentum water, 2.7 percentum mucus, 0.3 percentum salts and twelve percentum albumen. Therefore a food containing albuminoids and fat should be employed. The natural food of the fowl consists of insects, seeds, vegetable matter, etc. Therefore there should be a variety of grains, animal matter in the form of scraps of meat, etc., or pressed scraps, chopped cabbage, apples, etc., or, as has been practiced, finely cut and steamed clover hay. There should be a great variety at all times, and Indian meal scalded and well seasoned with pepper, or chopped horseradish, will be very effective. A recent writer prescribed scalded Indian meal made into a mush, which was cooked an hour or two and then fed hot with horseradish. It was recommended to cook food of all kinds and feed hot. This might be well as a stimulant, but corn meal must be combined with animal food to produce eggs. A supply of powdered shells or bone should be provided, not only to aid digestion, but furnish egg shell material. A correspondent of the Plymouth *Chronicle* mixed hogs' lard with the dough he gave his hens, and asserts that a piece as large as a hickory nut will set a hen to laying immediately after she is broken up from sitting; and that by feeding a little occasionally hens may be made to lay all winter.

HEATING A POULTRY HOUSE.

A plan for heating a poultry house at little expense will be interesting. A poultry house should not be warmer than fifty degrees above zero. In fact, if the temperature never reaches the freezing point it will be sufficient. A suggestion has been made to use a coal oil lamp, or one of the small coal oil stoves. Over this place a joint of stove pipe, being careful to raise it at the bottom, to allow of a free supply of air from below. Place a tin plate over the top of the pipe, but raised up with wire pegs so as to permit of a free draught through the pipe. The stove pipe will radiate the heat in all directions, and serve to raise the temperature sufficiently to avoid frost. Of course the stove (or lamp) and pipe must be protected with wire netting, in order to avoid accident or danger from the fowls. This arrangement will cost but little, and need not be used except when the weather is very cold, or to dry the house, as the bodies of the hens give off quite an amount of animal heat. There will be no harm resulting from foul air or gas from the stove or lamp.

CARBOLIC ACID EMULSION.

Crude carbolic acid will not mix with water, but it is cheap and should supersede the costly refined article. An excellent method of using it on the poultry house is to cut up half a pound of hard soap in a quart of water, and when it boils add a quart of crude carbolic acid. Now rapidly paddle the mixture with a piece of shingle until the whole is thoroughly agitated, which may require five or ten minutes. Add five gallons of water to the mixture, agitating well while so doing, and you have a mixture that may be sprinkled over every portion of the poultry house as a disease destroyer, and without any liability of injury to the fowls.

CAPON Instruments post paid, $2.50 G. P. PILLING & SON, 115 S. 11th St., Phila., Pa. Book free.

WANTED. White and Buff Indian Games. Address: Box 32, Washington, N. J.

Eggs for incubators, at 50 cents per dozen. J. F. Clarke, Marietta Poultry Farm, Marietta, Ga.

For sale or exchange.—A few good Lt. Brahmas, for choice Jersey cow. A. N. Doane, Gainesville, N. Y.

For Sale.—13 Light Brahma Pullets, now laying, and one cock, $20. A. Hostetter, Hanover, Pa.

JNO. D. SOUDER, Telford, Pa Breeder of 14 varieties of pure bred poultry. Catalogue free.

NECESSITY CLOVER CUTTER for sale, price $4. Maple Lodge, Basking Ridge, N. J.

FOR SALE. 15 cockerels and cocks, B. Leghorns and P. Rocks. S. WHIPPLE, Oakville, Mich.

Black and Wh. Langs and Wh Cochins, Barred P. G. Rocks. Eggs $1.00. S. L. Farrar, Bath, Me

S. S. Hamburgs and S. C. B. Leghorns. Superior young stock; prices low. A L. Cary, Lewis, O.

100 Black Langshans, from best strains for sale. Guar. F. E. Roberts, New Richmond, Ind.

Indian Games, S. C. B Leghorns, B. Astrachans. Eggs in sea. Cir. W. A. Williams, Rome City, Ind.

W. F. B. SPANISH only. Circular and my photo free. J. BENNETT, Sunman, Indiana

M. F. PECK, Produce Commission Merchant, 334 Washington St., N. Y. Broilers a specialty.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

45 leading variety of fowls. Eggs for hatching. Stamp for Cir E. H. Rodham, Shullsburgh, Wis.

DR. JOHN W. KING, Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

200 B. Turkeys from 18 to 24 lb. hens, 40 lb. tom. JOS. W. FLEMING, Buckingham, Ill.

Prize Winning L. B., B. P. R. and S. C. W. L Stamp. Wm. H. Van Doren, Buckingham, Ill.

Jumbo I. Games. Frayne, Champion and Agitator strains. Cir. P. O. Hopkins, Hammansburg, O.

LEARN TO CAPONIZE
INSTRUCTIONS MAILED FREE
WM. H WIGMORE, 107 S. Eighth Street, Phila., Pa.

Valuable Books Given for Securing New Subscribers at 50 Cents Each.

No. of Subs.		*Value.*
1	Hile's Book on Incubation	$ 25
1	Practical Caponizing	25
1	Standard American Poultry Book	25
1	How We Made the Old Farm Pay	25
1	Index to any Volume of POULTRY KEEPER	10
1	Poultry for Profit	25
1	Incubators and Brooders	25
1	Management of Young Chicks	25
1	"Poultry Keeper Special for 1887,"	25
1	"Poultry Keeper Special for 1892,"	25
1	Kendall's Horse Book	25
1	Temperance Volume	25
2	Complete Poultry Book	25
2	Diseases of Poultry	25
2	Breeders Egg Record and Account Book	25
2	Five Hundred Questions Answered	25
2	How to Tell the Age of a Horse	35
2	All About Broilers and Market Poultry	25
2	A. B. C. of Strawberry Culture	40
2	American Corn Husker	55
2	Knitting and Crochet	50
2	Indian Game	20
2	Moisture Guage	20
2	Willis' Veterinary Practice	55
2	Chicken Marker	25
2	Practical Poultry Keeping	50
2	Natural and Artificial Duck Culture	50
2	Silos and Ensilage	50
2	Small Fruits and Poultry	30
2	Fisher's Grain Tables	30
2	How to Select Cows	50
2	Standard and Commercial Poultry Culture.	1.00
3	Gentleman's Long Leather Pocket Book	75
4	Kidder's Secrets of Bee Keeping	75
4	Mrs Parker's Complete Housekeeper	1.50
4	How to be Your Own Lawyer	1.50
4	The People's Doctor	1.50
4	Everybody's Paint Book	1.50
5	Ladies' Home Journal	1.00
5	Compendium of Cookery	1.00
5	Affleck's Farmers Record and Acc't Book	3.55
6	A. B. C. of Bee Culture	1.20
6	American Standard of Excellence	1.00
6	Philosophy of Judging	1.00
6	Guenon's Milch Cows	1.00
10	Cruden's Unabridged Concordance	2 00
10	Polyopticon	2 50
12	Blakelee's Cyclopedia	3.00
12	Caponizing Set	3.00
12	Webster's Unabridged (Reprint) Dictionary, (full sheep bound)	2 50

PIT GAMES only. Stamp for circular to **D. L. LONG**, Lock Box 5, New Martinsville, W. Va.

W. H Turkeys, Imp. Ex. Incu. Capacity, 100 eggs. **IDA BRUSH, Gervais, O.**

FOR SALE.—Mon. Incu., 600 egg Capa., $45.00. F. C. Golcthwaite, Varnum Ave., Lowell, Mass.

1-4 Wild B. Turkeys. P. Ducks. **MRS. H. C. BOGERT & SON, Cartersville, Va.**

A. **RISLEY MULLER, Trnxton. N. Y.** B. and W. P. Rock, W. Wyandottes. Very fine. Write for wants.

Plymouth Rocks, Pekin Ducks. Fine stock for sale, reasonable. **C. & A. MILLS, Mt. Palettine, Illinois.**

EXCHANGE one 200 egg Perfect Hatcher in good order, for White Leghorn pullets. **M W. SHELDEN, Elmira, N. Y.**

LIGHT BRAHMA COCKERELS. elegant birds, none better. **N. E. WOODS. Pecksburg, Ind:**

Buff Wyandottes (Buffington Strain), 10 Cockerels for sale, $1.50 to $5.00 each. Also pair Buff Ply. Rocks, fine birds, $5. Jordan Philip, Jr, Hudson, N. Y.

S. **C. Brown Leghorns.** bred from the leading strains, selected stock, cheap now. Eggs $1 and $1.25 per 15. Write to Box 41, New Holland, Pa.

PIT GAMES ONLY ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

IMPORTED HOUDANS. Barred and White Plymouth Rock. Eggs $2.00. **G. E. CHALFANT, Hammonton, N. J.**

I. X. L. POULTRY YARDS. J. F. Scholz, Prop., Erie, Pa. Eggs for sale from prize winning Gol. Wyandottes. Cir. free. Stock for sale.

W. **G. MYER**, Madison, Wis. Lt. Brahmas, B. P. Rocks, P. Cochins. Cockerels, $1.50 and $2; trios, at $4 and $5. Write.

SPONGIA TABLETS (compound), the reliable Roup Cure. By mail, 35c. per box, 3 boxes $1.00. **W. W. HOGLE, So. Evanston, Ill.**

INDIAN GAME. Black and White Minorca stock for sale. Eggs in season. **REV. L. E. CRUMBLING, Hall, York Co., Pa.**

DR **S. C. MOYER. Lansdale, Pa.**, breeder of L. Brahmas, B. and W. P. Rocks, S. and W. Wyandottes and Ancorias. Choice stock for sale.

Home of the S. C. Leghorn. Buy my show birds and I will stay at home Dirt cheap. **H. C. HUNT, Delavan. Ills.**

IT WILL PAY YOU TO SEND FOR the Peep-'o-Day Brooder Circular, Dover, Mass.

200 Barred P. Rocks, 100 S. C. B. Leghorns, 75 Ind. Games, 50 Gol. Wyans. Breeding Pens, trios or single birds. E. E. Hudson, Kennedyville, Md.

WANTED. A-1 Lop-ear Rabbits. Give description and price. **J. H. TERENS & SON, Mishicot, Wis.**

500 fine large Chicks of all varieties at half-price. Eggs $2.00 for 15. Send 2 ct. stamps for 20 page Catalogue. Joe. A. Dienst, Columbus, Ohio.

FOR SALE.—Cornish Indian Games, Barred Plymouth Rocks and Mammoth Bronze Turkeys. **J. H. HELMS, Centreville, Ind.**

White Fowls. Stock for sale, cheap. W. Polish, W. Cochins, W. Leghorns, bred from prize winners. Cir. free. Geo. A. Friedrichs, Erie, Pa.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

Buff Legs., Bu P. Rks., L. Gms., Bl Mins., P. Rks. P. Ducks. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks, choice Cockerels $2 to $3 each. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. **A. WATTLES. Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.**

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13, $3.50 for 26. Stock for sale. **D. M POLING, Van Wert, Ohio.**

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass.**

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bediver and Pfidlimmon strains. P. H. Jacobs, Hammonton, N. J.

EUREKA POULTRY CO., Port Huron, Mich. (S. H. JACKSON, Leasee). Stock for sale from 10 varieties of fowls. Eggs $2.00 per setting. Write for wants.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P. O. Goochland Co., Virginia.**

Poultry and Dairy Farm for Sale or Rent, near Sea Girt and Spring Lake, N. J. For particulars, address **ROBERT M. MORTON, 31 W. 65th St., N. Y.**

White and Black Minorcas, Barred Plymouth Rocks and White Wyandottes. Stock at all times. Eggs in season. **WM. J. SCHAUBLE, Erie, Pa.**

Leghorns and Beagles. R. C. W. and Brown and S. C. Brown and Buff Leghorns and S. S. Hamburgs. 6 Beagles, 5 mos., from Reg. stock, for sale. **H. J. BROWN, Harford, Cort Co., N. Y.**

FOR SALE.—Perfect Hatcher, 1,008 capacity. Eureka Incubator, 300 capacity; both as good as new, at a bargain. Write with stamp enclosed to **A. C. KEEPERS, Latrobe, Pa.**

Hammonton Inc'bators & PRESSEY'S BROODERS are the best Cat. free. Hammonton (N. J.) Incu. Co.

EARL SHAW'S. MRS. ED. KLEVER'S. Buff Cochins, Lt. Brahmas, 300 grand birds for sale, exhibition and breeding birds, at lowest prices. Address us at Bloomingburg, Fayette Co., Ohio.

BUFF Wyandottes, Plymouth Rocks, FOWLS, EGGS. A clean sweep in prizes at World's Fair. **J. D. WILSON, Worcester, N. Y.**

BONE MEAL FOR POULTRY. Crushed Oyster Shells, Flint and Beef Scraps. Send for new price list. **YORK CHEMICAL WORKS, York, Pa.**

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

Northup's Black Minorca. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. **CHARLES RIVER POULTRY YARDS**, Newton Lower Falls, Mass.

LIGHT BRAHMAS. Heavy winners at Bloomington, Ill., Dec. 1892, and Indianapolis, Ind., Jan 1893. Stock for sale. **ALFRED DOYLE, Morgan Park, Ill.**

Dr. Wiant & Beringer, Marion. Ohio. Sole importers of Geffekin's Buff Leghorns. They are Buff. 100 extra fine breeders for sale at $2.00 to $5.00 each. Must have room. Improved Spongia Roup Cure, 25 cts., and 50 cts. per package.

GREAT CHANCE: INCUBATORS: 1600 egg Monarch, 4 300 egg machines: Brooders, 3 of Rankin's make. Perfect running order warranted good as new. Can give you starting outfit best in world, at ⅔ cost. Written reasons for selling. Also 1 Heater. X. Y. Z., Box 100, Charlestown, Mass.

500 First-class Fowls For Sale. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata, telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, **J. R. BRABAZON, Delavin, Wis.**

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator.

BARRED PLYMOUTH ROCKS exclusively. Eggs for hatching from stock that is fine, large and vigorous. Send for circular. **E. G. McCORMACK, Perryville, Indiana.**

Eggs and Stock for Sale.—W. Wyandottes and S. C. W. Leghorns (Knapp Strain). Single setting $1; the above breeds crossed for broilers, $4 per 100. Hens all extra good layers. Eggs carefully packed in egg-boxes. Plenty of good references given. **B. H. NOXON, Elm St., Ithaca, N. Y.**

CHICKEN THIEVES cannot operate successfully if your house is protected by the **Never Fail Burglar Alarm.** Battery, Bell, Switch, 250 ft. Insulated wire and attachments for 7 doors or windows. Directions sent so that anyone can instal it. Extra wire 30c. per 100 ft. Extra attachments 25c. Don't on large plants. James Rainsbury, Troy, N. Y.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.00, postpaid. They make handsome and valuable books. Address **Poultry Keeper Co.**, Parkesburg, Pa

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). **100 per cent. more made** in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS.** Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa.

MAPLE FARM DUCK YARDS.

The Largest Duck Farm in America

Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices **JAMES RANKIN, South Easton, Mass.**

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

CLEAR GRIT FOR POULTRY. Send stamp for sample. **D. LINCOLN ORR, Supt. ORR'S MILLS POULTRY YARDS, ORR'S MILLS, N. Y.**

SMITH BROS., True Grit Poultry Yards, Berea, Ohio. For sale Mammoth L. Brahmas, Indian Games, R. C. B. Leghorns. Golden and Silver Laced Wyandottes and Barred Plymouth Rocks, also 150 Stags, Pullets and Cocks. Kentucky Dominicks and Irish Black Reds, Irish and Mexican Grays. Every bird warranted dead Game. Eggs in season.

CHOICE STOCK FOR SALE after June 1st On account of making a change I offer one-half of my choicest breeding stock for sale at just one-half their actual value. If you want any of the finest of **Black Minorcas and Golden Wyandottes or Pekin Ducks, Part. Cochins, Barred or White Rocks. Write for particulars EMERY S. PUGH. Utica, N. Y.**

TO MAKE HENS LAY And Chickens grow, nothing beats ground meat and bone. Price $2.00 per 100 pounds. Send 10c. for sample. Pure ground bone at same price. Granulated oyster shells 75 cents per 100 pounds; fine ground oyster shells 50 cents per 100 pounds, f. o. b. Manufactured by J. H Devins, Albany St., Utica, N. Y.

WANTED:—A man thoroughly competent to run incubators and brooder house. Must be sober and industrious and willing to work. Incubator capacity, 4,400. Brooder house has capacity of 6,000. The best wages paid and the very highest references required as to ability and character. Married man preferred. Address Lawrence County Poultry Farm Co., Coal Grove, Ohio.

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other. Manufactured by **L. R. Oakes**, Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.**, by Geo H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

HAWKINS breeds America's best **PLYMOUTH ROCKS, Barred and White. WYANDOTTES, Silver and White.** More prizes awarded this strain than all others combined. Selected Breeding Birds that will produce winners. Finely illustrated catalogue of America's greatest poultry farm, free. Lock Box 4. **A. C. HAWKINS**, Lancaster, Mass.

Send stamp for illustrated catalogue of Incubators. **F. BANNING,** Factory No. 400-402-404, W. Vine St., Mt. Vernon, Ohio.

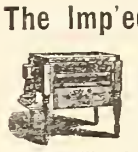
Mammoth New Catalogue Almanac AND GUIDE TO POULTRY RAISERS. 64 large pages, printed in colors. Description of all leading varieties of fowls. Over 50 fine illustrations. Plans for Poultry houses. Remedies for all diseases. Recipe for Poultry Powders. The finest thing out—everybody wants one. Only 10c. **C. C. SHOEMAKER, Freeport, Ill., U. S. A.**

Sweepstakes at Chicago, 1891 B. and W. P. Rocks, W. and S. Wyandottes, W. and B. Leghorns, and Bronze Turkeys. 300 Toms and Hens, sired by 44 and 47 lb. Toms. 500 Cockerels, pairs, trios and pens, mated for best results. Valuable illustrated circular, free. **F. M. MUNGER, DeKalb, Ill.**

SPONGIA, For Roup. 25 cents by mail from the Pharmacy, **Boericke & Tafel,** 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 228 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. **Oldest Homœopathic Pharmacy. Established in 1835.** *The Poultry Doctor*, 85 pp., 12mo, cloth, 50 cents.

A NEW INCUBATOR. Get our catalogue giving full description of the fastest and most Improved Incubator on the market. **EVERY MACHINE GUARANTEED. HOMER CITY INCUBATOR CO., HOMER CITY, PA.**

The Imp'ed Monitor Incubator.



Two medals and two diploma awarded at the Great World's Fair on special points of excellence as follows: "Completeness of arrangement for securing uniform heat. Proper ventilation and moisture, with ease of operation." Send stamp for Cata. for special offer we will make you now. Address, **A. F. WILLIAMS, 18 Race St., Bristol, Ct.**

MERIT WINS. This is the secret and accounts for the wonderful popularity of **BARTLETT'S O. K. FOOD,** Acknowledged by those who use it to be the Best Meat and Bone Poultry Food on the market. Made from fresh bones and meat, steam cooked and steam dried and converted into a sweet, nourishing, palatable meal. Sure to increase egg yield and make fowls vigorous. (Sample Bag, One Dollar). For further particulars send for our catalogue of Poultry Foods. Address **C. A. Bartlett**, Worcester, Mass.

LIKE WILL BEGET LIKE." 700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. At **New York**, Feb, '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. *"Like did beget like."* I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

ONLY $1.10! CANNOT BE EQUALED!

FARM POULTRY (Monthly)	50cts
POULTRY KEEPER (Monthly)	50 "
FARM and FIRESIDE (semi-Monthly)	50 "
MODERN COOK BOOK	50 "
Total	**$2.00**

All sent postpaid on receipt by us of cash or stamps, **$1.10.** Sample papers free. Address **FARM POULTRY, Box F. P. BOSTON, MASS.**

BOOM THE LEADERS!

The two best poultry papers on earth are
FARM POULTRY ..... **50 cts.**
and
POULTRY KEEPER ..... **50 cts.**
We will send **both**, for one year, for **only 70 cts.**
I. S. JOHNSON & CO., Boston, Mass.

HATCH YOUR CHICKENS! Brood them with the IMPROVED JUNIATA **INCUBATOR AND BROODER.** The latest improved hatcher in the world. *Reliable, Perfect, Self Regulating* Heated by a radiator. The most scientific incubator made. Guaranteed to hatch perfectly. KEARNS & ALEXANDER, Send 4c. for Catalogue. Yeagertown, Pa.

Spratts Patent Poultry Meal, the only Meal that should be used for Chicks, Ducklings, and young Turkeys: it has no equal. Being thoroughly cooked it is more easily digested, and cannot clog and impair the digestion of the young birds, as the raw meals do. It is invaluable for Laying Hens, and for getting Poultry into Show condition. Samples Post Free. Indispensable for feeding birds on a voyage. Spratts Patent Dog Cakes, the Original English Dog and Poultry Medicines. For particulars and prices ad. T. Farrer Rackham, 245 East 56th St., New York, N. Y

LADIES!! Why Drink Poor Teas? THE GREAT AMERICAN TEA COMPANY. When you can get the **Best at Cargo prices** in any Quality. Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums **given to Club Agents. Good Income** made by getting orders for our celebrated goods. For full particulars address THE GREAT AMERICAN TEA CO. P.O. Box 289. 31 and 33 Vesey St., N. Y.

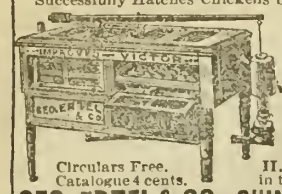
Hampshiredown Sheep: twenty ewes due to lamb in February, for sale, 2 and 3 years old. Poland China Pigs, Beagles and Foxhounds, variety of Poultry. Stamp for Prices and Circular. **A. ELWYN STRODE, West Chester, Pa.**

MONEY SAVED!

☞ Order your periodicals of us, and save money. Look at this list, and see that you get in many instances two papers for less than the price of one.

	Publisher's Price.	Price with our paper included.	Our Price Alone.
Amateur Sportsman, N. Y.	$1 00	$1 05	$ 85
American Agriculturist	1 50	1 65	1 35
" Bee Journal, Chicago	1 00	1 45	95
" Farmer, Springfield	50	85	45
" Poultry Advocate	25	65	20
" Stock-Keeper	1 00	1 35	90
Art Amateur	4 00	3 95	3 60
Arthur's Home Magazine	1 00	1 20	85
Babyland	50	85	45
Bee Keepers' Advance	50	80	45
Breeders' Gazette	2 00	2 25	1 85
Century	4 00	4 05	3 75
Chicago Weekly Inter-Ocean	1 00	1 40	95
Christian Herald	1 50	1 70	1 30
City and Country	50	80	45
Cosmopolitan	1 50	1 85	1 45
Cultivator and Country Gentleman	2 50	2 40	2 00
Demorest's Monthly Magazine	2 00	2 15	1 75
Detroit Free Press	1 00	1 45	95
Dog Fancier	50	80	40
Fanciers' Monthly	1 00	1 25	95
Fanciers' Review	35	65	30
Farm and Fireside	50	95	45
Farm and Home	50	80	45
Farm Journal	50	70	40
Farm Poultry	50	70	40
Farmer's Review	1 25	1 60	1 15
Frank Leslie's Ill. Newspaper	4 00	4 00	
" Popular Monthly	3 00	3 00	
Game Breeder	95	1 20	80
Game Fanciers' Journal	50	80	45
Game Fowl Monthly	1 00	1 10	75
Geflugel Zuchter	50	85	40
Godey's Magazine	3 00	3 30	2 90
Golden Days	3 00	2 95	2 60
Harper's Bazaar	4 00	3 90	3 60
" Monthly	4 00	3 90	3 60
" Weekly	4 00	3 90	3 60
" Young People	2 00	2 20	1 85
Home Queen	50	70	40
Horseman, Chicago	4 00	3 85	3 60
Household	1 10	1 30	90
Housekeeper, (Minn)	1 00	1 25	90
Lippincott's Magazine	3 00	3 00	2 60
Ladies' Home Journal	1 00	1 30	90
Michigan Poultry Breeder	50	75	45
National Stockman and Farmer	1 50	1 70	1 35
New England Fancier	50	75	45
New York Tribune, weekly	1 00	1 25	95
" " World, weekly	1 00	1 40	75
Our Little Ones	1 50	1 60	1 25
Peterson's Ladies' Magazine	2 00	2 00	1 70
Philadelphia Weekly Press	1 00	1 40	95
Philadelphia Weekly Times	1 00	1 40	95
Phrenological Journal	1 50	1 60	1 25
Poultry Bulletin	50	85	45
Poultry Chum	25	60	25
Poultry Journal, (American)	1 00	1 00	75
Poultry Journal, (Ohio)	1 00	1 00	75
Poultry Herald	50	80	45
Poultry Monthly	1 00	1 25	90
Poultry Topics	25	60	20
Poultry World	1 25	1 30	1 00
Poultry Yard, (American)	1 50	1 70	1 35
Practical Dairyman	50	70	40
Practical Farmer, Philadelphia	1 00	1 25	90
Practical Poultryman	40	85	45
Prairie Farmer	1 00	1 30	90
Presbyterian Journal	2 00	2 [illegible]	1 75
Scientific American	3 00	3 [illegible]	2 85
Southern Fancier	50	[illegible]	45
The Fancier (Pigeon)	1 00	1 2[illegible]	85
Toledo Blade	1 00	1 4[illegible]	99
Vick's Monthly Magazine	50	7[illegible]	40
Western Poultry Breeder	25	[illegible]	25
Western Poultry Journal	50	7[illegible]	45
Wide Awake	2 40	2 60	2 30
Youth's Companion, new subs only	1 75	1 80	1 40
Youth's Companion, (renewals)	1 85	2 00	1 90

THE IMPROVED
VICTOR
INCUBATOR
Successfully Hatches Chickens by Steam.

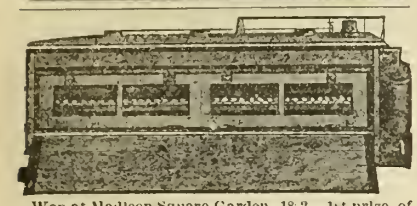


Absolutely Self-Regulating.

The Simplest, Most Reliable and Cheapest First-class HATCHER in the market.

Circulars Free. Catalogue 4 cents.

GEO. ERTEL & CO., QUINCY, ILL.



Won at Madison Square Garden, 18 2. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.

Jas. Rankin, South Easton, Mass.

"Everything For The Poultry Yard."

Poultry and Supplies

MOST COMPLETE STOCK IN AMERICA.

PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.

Our Breeds:—L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.

Do You Want Our Catalogue?

60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.

MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.

SIMPLEX HATCHER.

The Most Simple and Perfect Incubator Made.

Quick and certain; Hatches every egg that a hen could hatch; Regulates itself automatically; Reduces the cost of poultry raising to a minimum.

Best in every way—lowest in price.

Send for Illustrated Catalogue.

SIMPLEX HATCHER CO., Quincy, Ill.

A SPLENDID OPPORTUNITY

TO OBTAIN A

High Class Religious Weekly Paper.

SABBATH -:- READING.

A SIXTEEN-PAGE PAPER,
NO POLITICS,
NO SECTARIANISM,
NO SECULAR NEWS,

Nothing but the BEST READING for Sunday.

Live Reports of City Missions, showing what is being done in New York among the degraded and outcasts of both sexes; how they are invited to meetings, how they become converted, their testimonies for Christ, etc., etc.

Sermons, Sunday-School Lesson, Treatment of the current Christian Endeavor Topic, Mothers' Afternoon with the Children, and other most interesting Sunday reading.

The publishers of THE POULTRY KEEPER have made arrangements whereby the following unprecedented offer can be made:

TO ALL WHO SEND US

75 CENTS

we will send the POULTRY KEEPER for a year, and will also send

SABBATH READING

For a whole year

postpaid, absolutely free.

This is a grand opportunity to secure, free of all cost for a year, one of the best religious weekly papers published. Just think, a 16-page paper, stitched and trimmed, 52 weeks. Send to us for a free sample copy of *Sabbath Reading.*

POULTRY KEEPER CO.,
Parkesburg, Pa.

HIGHEST AWARD WORLD'S FAIR 3 MEDALS 3 DIPLOMAS

INCUBATOR ON TRIAL

NOT A CENT UNTIL AFTER YOU HAVE TRIED IT

STAMP FOR CATALOGUE

SAMPLE PAPER BOOK INCUBATION 5 CTS. SET PLANS BROODER HOUSES &c 25 CENTS

VON CULIN INC. CO DELAWARE CITY, DEL

The up-to-date
Chickener

always has our latest (1894) **Poultry Supply Catalogue** lying on his table for ready reference.

WHAT'S THE USE

of doing without it when it can be had for the asking. It has a page for **Bee Keepers**, too.

JOHNSON & STOKES,
217, 219 Market St., Philada., Pa.

THE
Improved Victor Brooder

Ends the trouble and increases the profits of poultry raising. Takes better care of the Chicks than a mother. Keeps them from being frozen or lost. Perfectly adapted for in or outdoor use. Glass covered, double decked, completely equipped. All sizes, all prices. Circulars *free.* Catalogue 4c.

GEO. ERTEL & CO., Quincy, Ill.

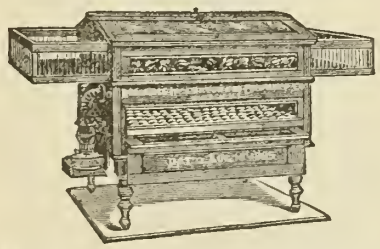
SPRAY YOUR FRUIT TREES & VINES

Stahl's Double Acting Excelsior Spraying Outfits prevent Leaf Blight & Wormy Fruit. Insures a heavy yield of all Fruit and Vegetable crops. Thousands in use. Send 6 cts. for catalogue and full treatise on spraying. *Circulars free.*

WM. STAHL, Quincy, Ill.

At the World's Columbian Exposition,

Old Reliable Leads Them All.



Medal and Diploma ON OUR INCUBATOR AND BROODER COMBINED.

4c. stamps will bring you the finest Incubator Catalogue published. We can furnish you a hatcher that will please and with reasonable care last a life time. 45 Yards of High Class Fowls. 10 standard varieties. Address,

RELIABLE INCUBATOR AND BROODER CO., QUINCY, ILL.

KNAPP BROS.

WHITE LEGHORNS, WHITE WYANDOTTES AND PEKIN DUCKS, AT THE WORLD'S COLUMBIAN EXPOSITION, were awarded **Highest Honors;** 20 birds, 11 entries, **7 first, 3 second and 1 third Prize. First on Breeding Pen of White Leghorns. First on Breeding Pen of White Wyandottes. HIGHEST SCORING BIRD AND BREEDING PEN** on exhibition in **any variety,** an average of 95 points on our entire exhibit. Our usual **sweeping record** on these two popular varieties at the **WORLD'S FAIR.** Two of the **first prize birds** not in our exhibit are now in our yards. Our breeding pens, next season, will contain these prize winners. **Every first prize,** with one exception, and **five of the second prizes at N. Y. State Fair,** Sept. 14th to 21st. The **records** will tell **who** won the **prizes** at the **late N. Y. Show** and at **32 of America's leading shows** during the past 11 years. **TWO HUNDRED** selected early hatched **COCKERELS, Trios or Breeding Pens** and **FINEST PEKIN DUCKS** at low prices for quality. Satisfaction guaranteed.

We also offer R. C. White Leghorns direct from B. R. Knapp's prize winning strain—four **1st** and one **2d** prize at **World's Fair.** Send stamp for **new, illustrated** catalogue, giving **highest prize record** ever won by **any** breeder of **any** variety. Address

KNAPP BROTHERS,
BOX 501, FABIUS, N. Y

THE BEST POULTRY FENCES,
Galvanized Wire Nettings,

ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 Inch.
2 Inch No. 19.	.90	$1.35	$1.80	$2.25	$2.70	$3.15	$3.60	$4.50	$5.10 Per Roll.
1 Inch No. 20.	$2.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00	$10.00	$12.00 Per Roll.

⅞ Inch Galvanized Staples, 10 cents per pound. Discount 5 rolls 5 per cent, 10 rolls 10 per cent.

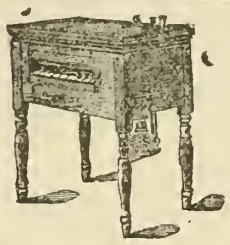
PETER DURYEE & CO., 215 Greenwich St., N. Y.

SPECIAL NOTICE.—Freight paid to any R. R. Depot east of the Mississippi River on 5 or more rolls

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Caps and Nails. Sample and circular free.

A. F. SWAN,
38 Dey St., N. Y.

OUR CATALOGUE FREE
POULTRY SUPPLIES
HARVEY SEED CO. BUFFALO N.Y.



The Prairie State Incubators and Brooders,

Are Endorsed by P. H. Jacobs.

94 FIRST PREMIUMS 94.

Hundreds of our Customers Use from 10 to 30 Machines.

Do not buy an Incubator or Brooder until you send for our **104 page Catalogue giving full particulars.**

ALL MACHINES WARRANTED.

PRAIRIE STATE INCUBATOR COMPANY,
HOMER CITY, PENNA.

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.

A Live, Practical Poultry Raising Guide.

It is acknowledged to be "**The Best Poultry Magazine Published**" in the world.

Send for **Index** to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin** with **any** back number you desire.

Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. "**What has been done, can be done again.**" Remember the price; 50 cts. one year; six months 25 cts.; sample **free.** Remit cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

MANN'S BONE, VEGETABLE, AND CLOVER CUTTER FOR POULTRY FOOD

$10.00 is the price of the Our new combination cutter. **SIMPLEX** Automatic, self-adjusting feed. leaves both hands free to work. **$10.00**

It will cut bones or vegetables **FOUR TIMES AS FAST** as any $12.00 Bone Cutter on the market and it is also an excellent Clover Cutter. Any boy can run it; it cuts fine, fast and easy. Fully warranted for one year. Catalogue free if you mention this paper.

F. W. MANN CO., Milford, Mass.

BONE AND SHELL
FOR POULTRY.

Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The fine or oyster shells furnishes shell material. The *granulated* size is for *adult* fowls; the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address

FITCH FERTILIZER WORKS, BAY CITY, MICH.

High scoring Barred Plymouth Rocks. Extra fine fowls for sale. L. W. PYLE, Bryn Mawr, Pa. **A. P. ALLEN, Leadville, Pa.** Pekin Ducks and S. C. W. Leghorns; 5 other varieties.

HATCH CHICKENS BY STEAM.

THE IMPROVED
EXCELSIOR INCUBATOR
WILL DO IT.

Thousands in Successful Operation.

Lowest-priced First-class Hatcher made.

GUARANTEED to hatch a larger percentage of fertile Eggs at LESS COST than any other Incubator.

Double-Regulator.

Send 6 cents for large Illustrated Catalogue. Circulars Free.

SIMPLE, PERFECT, and SELF-REGULATING.

GEO. H. STAHL, QUINCY, ILL.
PATENTEE AND SOLE MANUFACTURER.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Pekin Ducks.—Will some one give me information on raising Pekin ducks.—M. D. H., Sandusky, Ohio.

McFettridge's book, or Rankins' book, both on ducks, will give you full particulars. They can be procured at this office.

Distinguishing Turkeys.—1. How can a White Holland Turkey gobbler be distinguished the first year? 2. Are White Wyandotte cockerels pure when the saddle and wings are slightly straw colored?—U. Z. L., Langley, Ohio.

1. The gobblers show the tassel early, and are more caruncuated on the head. 2. Yes; all white birds are subject to straw color when exposed to the sun.

Spongia for Roup.—How shall I use Spongia for roup?—M. G. B., Glade, Pa.

Put ten drops, or twenty pellets, in each quart of the drinking water. Use a clean trough or dish.

Description of Breeds.—Where can I get a complete description of White Plymouth Rocks?—B. D. T., Medina, N. Y.

The "Standard of Perfection," price $1.00 for sale by us, describes all the breeds, from the beak to the toe.

Lime and Droppings.—If lime is used freely in the poultry house will it injure the droppings as a fertilizer?—O. H. DeL., Wheaton, Ill.

Not unless it creates heat and then it will liberate ammonia. The advantages of using the lime, however, overbalance any loss of fertilizer.

How Much Feed.—How much bran and shipstuff is sufficient for one meal for 100 hens, with grain for the other feed? I have a nice Black Minorca, whose comb is only common size. Is she pure bred?

There is no fixed quantity. About five pounds daily, with other food, is sufficient. The comb of the Minorca will become larger when she begins to lay.

Single Comb White Wyandottes.—Do pure-bred White Wyandottes have single combs? What heat in an incubator is sufficient to kill chicks?—W. B., Nobscott, Mass.

White Wyandottes with single combs indicate impurity. A heat exceeding 106 will destroy life, but it depends upon the period of heat. We have known an incubator to be as high as 116 for a few hours, yet no damage was done.

Feeding.—1. Are boiled potato parings mixed with other feed, say half a peck of parings to thirty-five hens per day, suitable? 2. Are peas good food for them?—M. H. D. Abbotsford, Wis.

They are excellent—both the potatoes and peas.

Plymouth Rocks.—I purchased eggs of Plymouth Rocks. The males were light and the pullets dark. Is there a difference between them in color?—W.C. G., Brooten, Minn.

Yes; the males are usually lighter than the females.

Caponizing.—I have not seen any article on capons and caponizing. Will you give details?—E. N. K., Girard, Ill.

January, 1887, and March, 1892, are full of the subject, with many illustrations. You can get any back number for five cents.

Questions from Florida.—1. Will Langshans and Brahmas thrive in this climate, when roosting outside, as the common fowls? 2. What is the cause of a scaly look to the comb, and a red or inflamed appearance to the feet and legs?—S., St. Augustine, Fla.

1. Yes; they will thrive in your climate as well as the common fowls. The point is do the common fowls lay. We believe an open shed would answer. 2. Due probably to a parasite. The difficulty is peculiar to the South. Anoint three times a week with crude petroleum.

Broilers.—Which is the best month to begin to hatch broilers? Which is the hardiest—Plymouth Rocks, Brahmas or Cochins?—A. S. C., Brighton, Mass.

Any time from November to March will serve to hatch early broilers. The three breeds are equally hardy.

Points of White Plymouth Rocks.—Kindly give points of White Plymouth Rock, and state name of book, and cheapest, which gives all the points.—G. C., Toronto, Can.

It would require half a page of the paper to give full, detailed description. Color white, single comb, yellow legs, red ear-lobes, and weight of cock, nine and one-half pounds. The cheapest book is the "Standard," for sale by us, price one dollar.

Poultry House in a Grove.—Will it make any difference if my poultry house is in a walnut grove?—Subscriber, Clinton, Ill.

It may prevent securing the warmth of the sun, but otherwise it will be an advantage.

Came Wrong.—I purchased a sitting of pure-bred Plymouth Rocks of a neighbor, and two of them were white. Do such instances ever occur?—Mrs. H. T., Gibbon, Nebr.

They occur very seldom, but have happened.

Silver Wyandottes.—1. Is there any difference between Silver and Silver-laced Wyandottes? 2. Is excelsior a good material for covering the poultry house floor? 3. Which is the largest breed of fowls?—W. H. B., Morristown, N. J.

1. There is no difference. The correct name is Silver Wyandotte. 2. It will not answer for litter to scratch in. 3. Light Brahmas.

Philadelphia Broilers.—What is meant by Philadelphia broiler?—R. C. G., Cranberry, Pa.

It is a term applied to all broilers coming into market from Pennsylvania and New Jersey to New York city. It is a misnomer.

Light Brahma.—Does a black beak on a Light Brahma disqualify, and is it best to have them as white as you can get them?—S. B. R., Wahoo, Nebr.

They should have dark mandable, black hackle, saddle, and tail, with black on the wings. See Nov. 1888 for description. Any back number five cents.

Black Feather.—Is one black feather on a Plymouth Rock indicative of impurity?—C. H., St. Paul, Minn.

They cannot be disqualified except for red feathers in plumage, not black, but are disqualified for some other defects. See Nov. 1888 POULTRY KEEPER.

The Next Standard.—When will the next Standard be out?—E. H. G., Galveston, Tex.

Probably some time next year. The time is uncertain.

Roost.—Which is better, a flat roost or a round one?—Mrs. J. M. M.

A piece of 2x3 scantling, the edges rounded, makes the best roost, the narrow edge up.

White or Red Clover.—Which is the best clover for poultry—white or red, or whether it should be mixed with grass?—H. W. E., Glenwood Springs, Colo.

The white is better. If mixed with grass it is an advantage.

Space for Fifty Hens.—1. Please state the smallest space in which fifty White Leghorn hens can be profitably kept? 2. Is it of vital importance whether the poultry house faces the north or east?

1. The Leghorns are active, and each hen should have at least five square feet, though ten is better. 2. A house facing the south or east is warmer, though it is not of vital importance.

Buff Wyandottes.—1. Do the Buff Wyandottes breed true to feather? 2. Do they equal the others? 3. Will eggs hatch if sent from America to New Zealand?—P. McD., Turua, Thames, New Zealand?

1. Not as true as the Buff Cochin, but are improving. 2. Yes, so far as we can learn. 3. It depends on the speed of the steamer. Eggs have been sent from California to Australia and hatched, but it is a risk. Better buy fowls.

Coal Ashes.—Will coal ashes free ammonia in poultry manure?—E. W. B., Wallkill, N. Y.

No; they will serve rather as a preservative.

Do you want a weekly poultry paper? If so here is our offer: The *Fanciers' Journal* and *American Fancier* are each $1.50 per year. Send us the money for either and we will throw the POULTRY KEEPER in for *good measure*—that is we send you two papers for one price, or will send you the whole three for $2 50, saving you one dollar.

BOOKS FOR FIVE CENTS EACH.

The following are *special subjects*, and though they are *back numbers*, yet each is worth a year's subscription.

You cannot get a high-priced book that will give so much on the subject selected.

Any of the following for only *five cents in stamps*:

Testing Eggs, (illustrated.) August, 1885, Sept., 1890; June, 1891 and June, 1892, the latter full of illustrations

Plymouth Rocks, (description). Preserving Eggs. Sept., 1885.

Buff Cochins, (description) Oct., 1885.

Rouen Ducks, (description). Dakin's Brooder. Dec., 1885.

How to Ship Poultry. Toulouse Geese (description). Sept., 1886.

Plan of a Broiler House. Breeds of Ducks. The West Chester Gape and Roup Cure. Oct., 1886.

All About Roup, eight columns. Nov., 1886.

All About Cholera, seven columns. Dec., 1886.

Testing Eggs, by Campbell, three columns. Dec., 1886, and Jan., 1887.

Caponizing (illustrated). Jan., 1887, and March, 1892.

Gapes, four columns. March, 1887.

All About Turkeys, seven columns. March, 1892.

How to Make the Hot Water Incubator, (illustrated). French Mode of Cramming Fowls. Mrs. Moore's Egg Preserving Recipe. Why Chicks Die in the Shells. July, 1887.

All About Preserving Eggs, six columns. An Egg Turner. Harris' Poultry House. Sept., 1887.

All About Lice (illustrated). Oct., 1887, and Dec., 1891. The latter shows the kinds of lice, magnified.

Poultry Diseases. Crop-Bound. Egg-Bound Feather Pulling. Soft-Shell Eggs. Hens Eating Eggs. Bumble Foot, Seabby Legs, Worms (six columns on diseases). A Big Egg Farm (prices). Nov., 1887.

An Incubator Regulator. Plans of Incubators and Brooders. Dorkings. December, 1887.

Making Condition Powders. Points for Pasting Up. How to raise Ducks. Shipping and Dressing Poultry for Chicago. January, 1888.

How much Feed to Give. Poultry House Floors. Lee's $10 House. A Cheap Tank for Incubator. A Cheap Egg Tester. June, 1888.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Feb., 1888. Also April, 1892.

Poultry Houses. April, 1887; Oct., 1888, and July, 1891. Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec., 1892.

The Hen and the Food. July, 1888.

Fertilization of Eggs, five columns. The Ferrett Feeding for Eggs. Sept., 1888.

Description of Breeds—Light Brahmas, Plymouth Rocks, Pile Leghorns, Langshans, Houdans, and Brown Leghorns. Five columns. How to Place the Thermometer, (illustrated.) Nov., 1888.

Shipping Poultry to Market—all about it. Dec., 1888.

How to Feed for Eggs. How much to Feed. The Kinds of Food. Condition Powders. A Whole Book in a Small Compass Nearly eight columns on Feeding, with tables and proportions. Oct. 1891.

The Bronze Turkey (description). More About Feeding. Preserving Eggs with Cold Air, Bees-wax, and Parafine, Feb., 1889.

Shipping Coops, (illustrated). The *Farm Journal* Hot Water Brooder. Mar., 1889.

Young Turkeys. All About Geese. Pigeons for Profit. Mating Plymouth Rocks. Preserving Eggs. Partridge Cochins. Eleven Reasons Why Eggs Do Not Hatch. July, 1889.

Brooders, Incubators, Appliances, Poultry Houses, etc., (many illustrations). Aug. 1889, and Aug., 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte. Fertilization of Eggs. Scoring Games. Oct. 1889.

The Ventilator discussion. Dec., 1889, and the "Principles of Ventilation," in March, 1890.

Rudd's Hot Water System. May, 1890. Two pages (illustrated).

Rankin's Great Duck Farm, (illustrated). July, 1890.

Science of incubation, by Hock, two pages. Oct. 1890.

Artificial Incubation in Egypt, (illustrated). Dec., 1890.

Spongia as a Roup Cure—four columns. Jan., 1891.

A Whole Library of Points. A grand issue. Aug., 1892

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892.

Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept., 1891.

Each one of the above issues contains other valuable information also. The subjects named are the *leading* articles.

The reader should keep this for reference. It will save much time inquiring for special articles.

The issue on Poultry Houses, Brooders, Appliances. Feeding for Eggs, Caponizing, Prices for the Whole Year, Preserving Eggs, Turkeys, Points on Hatching, Points on Raising Broilers, Testing Eggs, and some others, are worth fifty times the price, as there is no book published that can even compete with a single number.

THE VON CULEN INCUBATOR AT CHICAGO.

We were late in getting a full report of the operations of this incubator at the World's Fair. The Von Culen Incubator is made by the Von Culen Incubator Co., Delaware City, Del. Every chick shown on its stand was hatched from fresh eggs placed in the incubators, and were run on full time, sixty-four hatches being made by them, and all the chicks could be seen as they were hatched. Those who once doubted that a really first-class hatching machine was in successful operation, were relieved of that doubt by watching these hatchers bringing forth strong, healthy chicks every day—the process being in full sight—from the breaking of the shell until the chick came out, and they came out leaving the shells clear and clean. The experienced poultryman can tell by the looks of the shell, after the chick leaves it, whether or not it was properly hatched. This company made sixty-four separate hatches at the Fair, and state that they hatched as high as one hundred per cent. of the fertile eggs. Their lowest hatch was eighty-five per cent., and the average was ninety-two per cent. from the sixty-four hatches. Chicks were taken as souvenirs of the Fair to all parts of the United States Chicks hatched on this platform were placed in brooders, grown to broiler size, and broiled on a gas stove right at the exhibit, never having seen the outside of the building—a feat now placed on record for the first time. They state that they hatched the first chick from the egg and the last chick in the Fair, and took three medals and three diplomas. They put out as high as 16,000 cards in one day, besides 4,200 pounds of catalogues. The sales of incubators made through the World's Fair exhibit will extend to almost every country represented there, and they will be used for all kinds of work, from hatching pheasants' eggs, for game preserves in Europe and America, to hatching ostrich eggs in Africa.

The person who imagined the poultry business was a small thing was easily relieved of that notion by watching this exhibit for half an hour, and noting how many persons were interested in poultry. A glance over their register will show an average of three hundred names a day, signed for poultry literature to be mailed to them, besides the thousands who took catalogues and cards with them.

In August this firm was obliged to put on extra force at their factory, which was never done in any August previous to this year. Their hand book of incubation can be had by mail for five cents in stamps.

CHOPPED TURNIPS FOR GEESE.

Instead of feeding geese and ducks until they are very fat, which retards them in laying, they may be given a ration once a day of chopped turnips sprinkled liberally with bran. They will thrive well on this diet, if given a mess of ground grain, moistened with milk, at night. As soon as ducks and geese begin to lay, give them some ground meat in their food, and if skimmed milk is plentiful, give them all they will drink, as they will be greatly benefitted from its use.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers Price sixty cents, postpaid

Vol. X. PARKESBURG, PA., FEBRUARY, 1894. No 11

CONTENTS.

Pierce Breaks Loose. 161
The Reliable Incubator. 162
They Do Not Lay—Spongia for Roup—Red Pepper and Bones—Cold Storage. 163
A Remedy for Roup and Lice—A True Hawk Story—Lye the Best Lice Destroyer—Two Story Poultry Houses—Wild Turkeys—Snails and Lime—He Feeds too Heavily—Heavy Capons—Ventilation—A Large Poultry House—Stop that Tired Feeling. 164
Brief Remarks: Scotch Terriers, Will Keep Over a Hundred, Good for the Lady, Ventilation, Cold Climate Best, Believes in the Breeds, Will Try Large Numbers, A Turkey Laid Eighty-five Eggs, Cleared Eighty Dollars Keep It Coming, Light Brahmas, Nearly 3,000 Eggs, Made a Mistake, His Paper Did It, Alum Water For Sore Heads, Eggs Should Be Tested, For South Jersey Breeders, Has a Big Flock, Coal Tar For Lice—Cold and Young Chicks—The Webster Wheelbarrow, (Illustrated)—Mr. Van Doren's Yards, (Illustrated)—A Point On Broilers. 165
The Reliable Poultry Yards, (Illustrated)—Partridge Cochins—Knapp Bros., (Illustrated)—McFettridge, the Duck Raiser, (Illustrated). 166
Mr. Gammerdinger's Large Establishment, (Illustrated)—Wigmore's Instruments, (Illustrated.) 167
Editorial Items—Just Read This—Your Mistake—Send Us Your Experience—Poultry for Profit—Bound Volumes—Buff Cochin Club—Don't You Miss It—The Editor's Little Say—All About Broilers—Profitable Poultry Farming—The Poultry Keeper Specials. 168
We Have Bought the Fancier's Journal—Something About Soft Eggs—The Chicago Show—Mentionings—To All Interested—A Free Gift. 169
Mr. Forsyth's Rose Comb White Leghorns—The Hen and the Cow—Arrangements for Poultry—Buying and Selling—The Very Best Breed—Eggs by Parcels Post. 170
Boston vs. Hammonton—How Much Feed Per Hen—Fish For Poultry—Blind in One Eye Only—Overstocking the Market—Eggs By the Pound. 171
Mr. Edward Atkinson Replies—Books For Five Cents Each—Value of Purity in Breeds—Egg Rations—Poultry in Orchards—Capital Required—Something You Want. 172
Advertisements. 173
Advertisements. 174
Advertisements. 175
Bureau of Information—Something About Foods—Feeding Hard-Boiled Eggs—Publisher's Department. 176

HE HATCHED 2000 BROILERS.

Mr. E. E. Sloat, 820 Stebbins street, Toledo, Ohio, is a breeder of pure breeds and also makes a specialty of broilers and roasters for market. He gives some valuable information on prices, etc., and writes:

The broiler market has been very favorable. My first lot, (sold Dec. 2d) brought me $6 per dozen, which I think is a good beginning. I have 2000 broilers, and began hatching again on January 1st. My broiler ranch is on a property 90x100 (less than one-quarter of an acre), and my brooding house is seventy-three feet long, with twelve apartments. I have been very successful since I wrote Mr. Jacobs some time ago of the trouble I had. He preached *heat*, which I found was just what was needed. It is astonishing the amount of heat a little chick will stand. Better give too much than not enough. Last February (1893) broilers reached $8 per dozen here, and I did well. So long as I remain in the poultry business I shall have the POULTRY KEEPER.

We gave Mr. Sloat's full address in order to convince our readers that there is money in broilers when handled by the right process His success is in keeping them warm. Instead of freezing them with *ventilation* he keeps them like young babies. It is better to have a brooder between ninety and 100 degrees, than to take any risk. Even the brooder house should be ninety if possible. We thank Mr. Sloat for his valuable letter.

PIERCE BREAKS LOOSE.

Mr. B. N. Pierce, in his paper, attempts to apologize for Chicago work by abuse. In quoting from him we do so simply to make known some matters for the benefit of others. Mr. Pierce says:

It is well to say that an offer was made at the last meeting of the A. P. A. by a member, that each of the applicants for membership to that association who were not prepared to pay the necessary life membership fee in cash, should give a satisfactory promissory note for that amount due in sixty days, but that was deemed unnecessary, and they were admitted under the rule of allowing such applicants sixty days time. [See Constitution].

The rule applied to a former period when members had to *pay*, then making good the balance to become *life* members Only *one* man paid the Secretary (Mr. Br wn) *after* the meeting, and *three* paid Mr. Peer *before* the meeting. Eleven paid up to December 11th. Twelve *have not paid*, and the *time is up*. The votes were *illegal*. *Who* were the parties who took it upon themselves to "deem it unnecessary" as stated above.

The next item refers to the first prize cock, which is as follows:

The Plymouth Rock cock which won first at the World's Fair, with the same comb and tail he then had, is still a living witness in proof that the report made in the *Poultry Keeper* concerning him is a vile charge and without truth, whoever may have been its author.

Well where is he. A New York man says, and so advertises, that *he* has him, and that *his strain* won. Yet the prize is set down to an *Indiana* man. The Indiana man tries to excuse appearances by "moulting," etc., but the giving of the first prize to a moulting bird does not work—not at a show like Chicago. We, *and others*, *saw* the bird that was in the first prize coop, and his tail was clipped, while his comb was a disgrace.

We wish to say to Mr. Pierce that he was openly charged with *favoritism* at a St. Louis show, and by one of the very men who now is his friend. We can produce the evidence, and perhaps *will* give the whole facts.

The *Poultry Keeper*, by its disorganizing methods and by a course it has always pursued, again attempted to pull down and destroy the American Poultry Association. How well it has succeeded is evinced by the large, enthusiastic and harmonious meeting held at Chicago. It is a notable fact that its editor suddenly disappeared after its first session. Evidently he saw he was not "in it." His New York methods were at a discount.

We deny that we have, since being a member, shown any animosity to the American Poultry Association. We do not deny that the meeting at Chicago was *harmonious*. In the hands of a few, packed with illegal votes, and the judging given out as was desired, harmony was supreme. To our own knowledge one of the judges, at another show, refused to give a man the awards due, and then slipped around and bought birds from the very man whom he deprived of the awards.

Now we did not "suddenly disappear." We attended the first meeting, in charge of an attendant (being an invalid), and the room was cold, the meeting being held at night. We left every evening at six o'clock owing to the difficulty of getting away later, and being editor of *The Implement Age*, we spent our time during the day in the agricultural implement annex.

As there had been a meeting at Charleston (which we attended), and at Los Angeles, we were not aware that our presence was required to explain anything. If so, we would cheerfully have been at every session of the Chicago meeting, if we could have done so.

It does not become Mr. Pierce to complain. He has used the A. P. A. for the bread and butter he could get out of it. When that opportunity is gone his loyalty will flag. He succeeded in getting one job there, which requires *no work* of consequence, as Mr. Babcock, at a previous time, made all complete, but we venture to say that his bill will be just ten times larger than for which other men would perform the work. Why Mr. Pierce should be so interested in the "bluffing" as he styles it, is a mystery. Perhaps it was to partly pay for attempting to use the A. P. A. at Charleston to get him a job.

If Mr. Pierce, or any others, suppose that we are asleep, we will state that we are only waiting for the A. P. A. proceedings, and he will then find that if we were attacked in our absence, that our turn will then come, and every member of the A. P. A., will know the *facts*, and we will state further that we *have them*, even to the pulling of the feathers at St. Louis. Further, if Mr. Pierce supposes that we have overlooked his judging at other shows we can convince him of the contrary.

We said nothing against the A. P. A. meeting. We related *facts* in regard to the election. Can Mr. Pierce deny or disprove them.

We stated that a stranger would have supposed it was a *sheep* show until he reached the building. Does he deny it.

We stated that one man, by using his family, got three chances to others. Who dare deny it.

We reported the show. We are supported by other respectable journals. We gave the *facts*, as far as we knew. Even a lame reply by a party in our last issue, simply confirms us. Abuse will not answer. We challenge denial.

JUST READ THIS: Fifty views of the World's Fair, the POULTRY KEEPER one year, all for fifty cents. The Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for 50 cents to new subscribers. See adv.

BREEDING PEN WHITE LEGHORNS. FROM RELIABLE POULTRY YARDS, QUINCY, ILL.

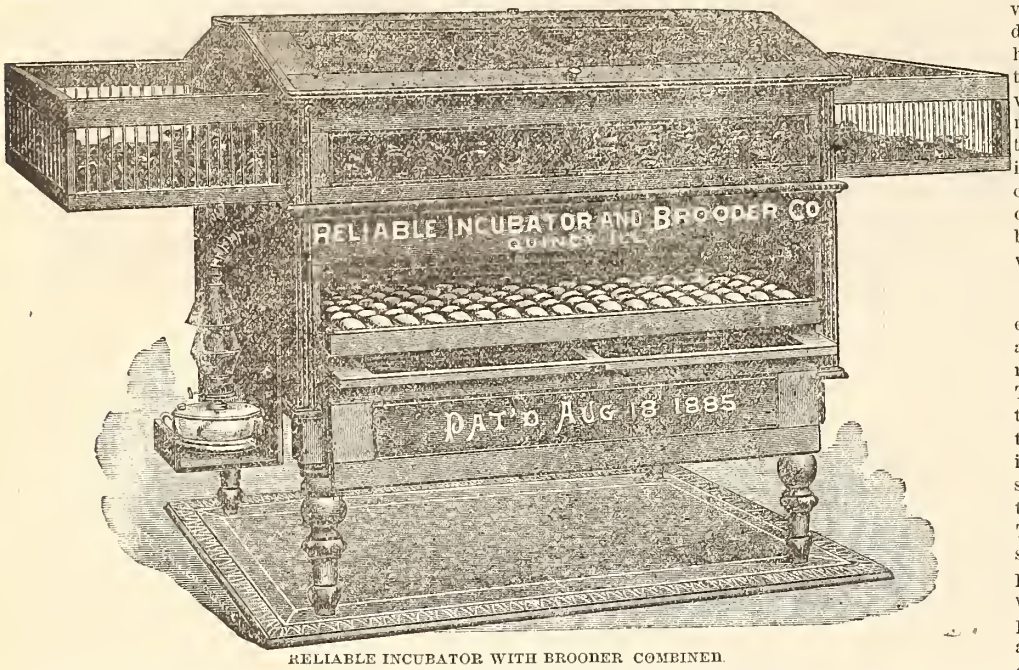
JUST READ THIS: Fifty views of the World's Fair, the POULTRY KEEPER one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for 50 cents to new subscribers. See adv.

If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of the paper for a year. If you are already a subscriber or receive more than one copy, it means we want you to hand them to poultry raisers.

THE RELIABLE INCUBATOR.

AN INCUBATOR THAT HAS BEEN SUCCESSFUL—HUNDREDS IN USE—SOMETHING ABOUT IT.

We do not knowingly illustrate any incubator that we fear will prove unsatisfactory, and the best test to us is when we receive no complaints. When an incubator goes out, and is used by hundreds, it must be something marvelous if there are no complaints, but we will state that the first complaint against the Reliable has yet to reach us.



RELIABLE INCUBATOR WITH BROODER COMBINED.

The Reliable Incubator Company is composed of Messrs. J. W. Myers, C. A. Myers and Wm. B. Dean, well known citizens of Quincy, Ill., and they have endeavored to build up a *permanent* business by improving their incubator and making it of good material. The incubator is the invention of Mr. Louis Kuhner, an old and respected citizen of Decatur, Ill., where sixty of them are in use, and was patented August 18th, 1885, nearly eight years ago.

HEATING ARRANGEMENT.

The Reliable is equipped with a tank of unusually large water capacity, extending over the entire surface of the incubator, and holding from twelve to twenty-two gallons of water, according to size of machine. The tank is made of the best grade of galvanized iron obtainable. The interior of tank is arranged with a most extensive and complete heating system; ten feet of two-inch tubing is required for tank size No. 3, and forms a letter S, extending three times lengthwise of same. Every tank is four inches thick. This large body of water is heated with a lamp of improved pattern, stationed at the end, on outside of incubator, which makes it convenient and easy to attend. The hot air is brought into the tubing direct from the heat receiver, at which point a current or draft is formed and continues to pass through the pipes, which are entirely surrounded by water, and is exhausted at the end of outlet pipe. The outlet pipe is supplied with an ingeniously contrived damper. Every portion and part of the tank, or the egg chamber underneath the tank, will show exactly the same degree of temperature.

REGULATING THE HEAT.

To control the heat through a course of hatching at a temperature of 103 degrees within the egg chamber has been the perplexing question with all incubator manufacturers. Methods consisting of electricity, mercury, water-expansion, thermostat, lamp-trips and other devices they have personally and practically tested, which enables them to know from experience the great advantage of an incubator with a large water capacity, to produce the amount of heat necessary without bringing it to a boil, which is sometimes the case where small and shallow tanks are used. The Reliable Hatcher is supplied with *four* exhaust ventilators, one at each corner of the machine, and so arranged that during incubation a continuous and evenly distributed current of warm air passes through the egg chamber, carrying with it all gas and poisonous vapor which accumulates during the process of hatching, and exhausts the heat as it reaches the point of 103 degrees. By this method they have a regulator which is simple, perfect and absolutely reliable, and one that produces a gradual and even ventilation, and avoids all chilly drafts.

THE WOODWORK.

The Reliable incubator will compare favorably with any piece of cabinet furniture. The sides and back consist of double walls, lined with double thickness of XX red resin cardboard, one inch vacuum space. Both outside and inside casings are of solid lumber, not pieced or matched After the tank is adjusted to its place, the first covering is two thicknesses of cardboard; second covering, matched flooring, tightly fitted; third cover, one thickness of cardboard; fourth cover, matched flooring three inches wide, dressed to a finish; the bottom floor is of two thicknesses, with cardboard between each layer, which is of tongue and grooved material four inches wide and three-fourths of an inch thick. The front of machine is supplied with two separate doors; the inner one is of glass panels, which enables the attendant to observe the thermometer, stationed in an upright position in the center of the egg-chamber, without opening the machine and exposing the eggs; the outside door is close-fitting and perfectly tight.

THE REGULATOR.

The regulator is a thermostat bar, twelve inches long, composed of steel, brass and rubber, all especially prepared for their hatchers. The bar is securely fastened to the underside of frame which supports the tank and on a level with the upper surface of the eggs. At the unfastened end of the bar it connects with lever and a brass rod, which opens and closes a small ventilating tube. This ventilating cap is easily adjusted by means of two little set-screws (one above and one below the cap) on outside and on top of tube, and can be set to open or close at any desired degree of temperature in the egg-chamber. With this regulator no rods or bearings are attached to the outside of the machine.

TURNING THE EGGS.

All of the machines of less than 300 capacity have one single egg-drawer, which covers the whole surface of hatching apartment, four inches below the boiler. The tray is made of light material, but very durably and neatly constructed, handled with perfect ease, no lifting required—when drawn out of the machine it is self-supporting. The interior of this drawer is equipped with a sliding rack, arranged in sections with transverse bars, between which the eggs are placed. This rack has a sliding space of two and one-half inches and is moved either to the right or left, which turns or rolls every egg with as great care and precision as possibly could be accomplished by any other method and does not necessitate pulling out the egg-drawer. When the eggs commence to pip the turning-rack is easily removed, which renders the drawer a roomy little nursery for the chicks until they become thoroughly dry and lively.

VENTILATION.

The bottom of each Reliable Incubator is supplied with two air-ducts, which admit the fresh air into the lower part of the egg-chamber, passing through two hot-air boxes, where it becomes nicely warmed, and then distributes through the entire hatching chamber. All gas and poisonous vapor which accumulate during the process of hatching is expelled through four exhaust valves, one at each corner of the machine, between the linings, and independent of the vacum spaces, and not carried through the brooding department, which avoids draughts.

MOISTURE.

There is nothing more essential connected with artificial incubation than moisture rightly applied. Their system of ventilation aids in controlling the air saturation, as an increased or diminished supply of air will affect the supply of moisture. The Reliable has a very small opening, with proper side ventilation, which causes the air to pass over the pans and absorb a greater amount of water, a condition which must not be overlooked, because over-saturation is as fatal as insufficient moisture. Thus it will be observed that their hatchers are built on strictly scientific principles, fulfilling the three essential conditions of successful hatching—proper application of heat, pure air, and the requisite amount of moisture, all under the control of the machine's own action.

VALUE OF EARLY CHICKS.

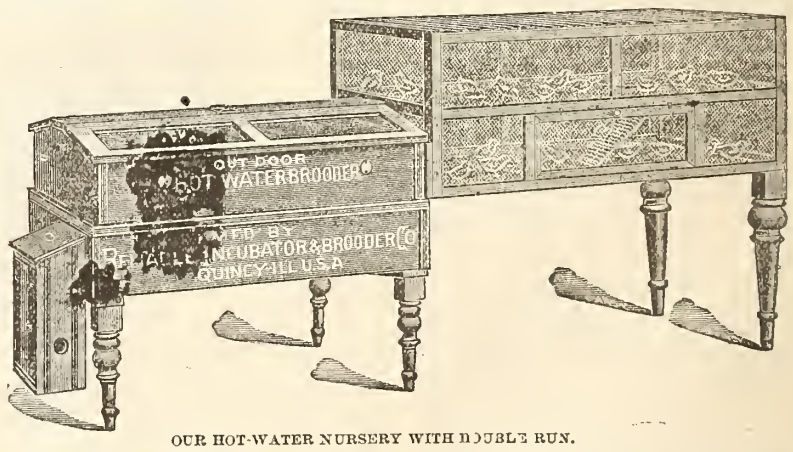
Experience has taught that the most profitable time to start an incubator is from October 1st to March 1st for market purposes. This brings the stock to a marketable size when the demand and price are at their height; and, on many occasions, during the latter part of February, birds, weighing a pound and three-quarters, sold for $1 each. Chicks that get into market during January, February, March and April are known as broilers, and usually sell best when not over a pound in weight. The price is then anywhere from sixty cents to $1 a pound. Sometimes even three-quarters of a pound is better weight than a pound, but these small weights are most preferable early in the season. Then, afterwards, birds weighing from one and a half to two and a half pounds will become more saleable the price being usually about thirty-five cents a pound, or seventy-five or eighty-five cents for the chicks. And so the price and and weight will keep pace in opposite directions until late in the fall, when the grown fowl of seven or nine pounds goes to market and brings from sixty to seventy-five cents. These figures will vary somewhat; as locations and markets and other causes may vary them in either direction; but it requires only a glance to show that the profits is in the early chicks. And, owing to the fact that human ingenuity has not been sufficient to compel Miss Biddy to sit without she sees fit to do so, the true value of an incubator and brooder can only be estimated when we consider that it enables one to hatch at any season of the year.

COST OF CONDUCTING A POULTRY BUSINESS.

It is impossible to conduct an extensive poultry enterprise with hens for hatchers and mothers, because of their quarrelsome disposition when confined together with young broods, and because lice will surely intrude themselves and introduce an interminable train of disorder. Besides, it is impossible to keep hens confined to their nests when a few begin to hatch. They demand more watching and work than twelve incubators, and then it is out of the question to compel contrary hens to sit. Confine the work to a few (twelve or fifteen) then they can be managed, but fifty or 500 cannot be controlled. But now suppose that one embarks in the poultry business for the object of breeding broilers for the market, and on a scale sufficiently large to justify the devotions of all the time.

It would require 500 hens to thirty-five cockerels. These should be divided into thirty-five pens, at least 20x40 or fifty feet each. These houses should be built in rows, one behind the other, thirty or forty feet apart, and yards between the buildings. The partitions can be made of lath, dividing the yards from the building, and also the houses inside. The pens should contain about fifteen pullets and a cockerel, all ten to eighteen months old; the males should be the youngest of the two. From the thirty-five pens one can count on 1,700 eggs per week, and sit 1,100 eggs or more per week, and to this end would need incubators with a total capacity of 3,300 eggs. When the last two machines were filled the first two would be hatching, and therefore two incubators of 800 eggs would be due every five days, and so after the first three months there could be made a shipment of 500 to 700 chicks every five days, at from fifty to sixty cents each.

First of all, construct your houses and yards for the breeding stock, and a nursery for the chicks. The latter should give 18x18 feet allowance for every 1,000 chickens. One house 18x200 would safely serve for the 10,000 chicks which you would have to shelter and care for until the first shipment was made. Now let us estimate the cost of all this enterprise. The hens would cost $250, the males $35, total $285. Then the houses and runs would cost $500, the eight incubators $300, the houses for hatching $200 more. This would make a total expense of $1,285. This is a liberal allowance for everything, and once purchased need not be in our calculations after the first year. We begin hatching in November and continue on through the month of March—five months, or twenty-one weeks, at 600 chicks per week, which would give us 12,600 chicks for sale. Of course this can be reduced by losses, and other drawbacks.



OUR HOT-WATER NURSERY WITH DOUBLE RUN.

Let us compare this enterprise with the purchase and cultivation of 160 acres of land. At $30 an acre the farm will cost $4,800. We will suppose it is fenced and furnished. It will require two teams at $300 each, and two men, at $18 per month, for five months, to run it; which is $780. It will require one reaper, one drill and two plows, at $50 each, and 200 bushels of wheat to seed and harvest it. These would cost

$500, which, added to $780, amounts to $1.280.

Now for results: Twenty bushels of wheat per acre is a large average yield; and $1.25 per bushel is a large average price which amounts to $4,000. Now deduct from this amount $1,280, which would leave $2,720. We have $5,000 net profit in poultry culture, against $2,720 in agriculture, a difference of $2,280 in favor of poultry. In every instance, we gave you the advantage in figures, and allowed you to mature your crops in five months, but it would take more time than this.

GENERAL REMARKS.

The Reliable will hatch turkeys, ducks, geese, or chicks. Every Incubator shipped from their factory is furnished with lamp, lamp burner, metallic lamp flue, heat receiver, lamp bracket, regulating guide and caps, ventilating covers, moisture vessels, our improved egg drawer with turning rack, tested thermometer, book of instructions; in fact, every attachment necessary to put the machine in perfect operation, except water, oil and eggs, and articles are included with the price of every machine, without extra cost. The incubator is also guaranteed.

The Reliable Incubator, in the hands of its former management, was comparatively dead and unknown, patented August 18th, 1885, and sold to its present owners March 28th, 1892, up to that time less than 125 of these machines having been sold, and more than one-half of that number was bought by persons in and about the vicinity of Decatur, Ill., the home of its birthplace. The wonderful results of this Hatcher, which had proven successful in nearly every purchaser's hands, attracted the attention of Messrs. Dean and Myers Bros., who set out at once to personally investigate its real worth, by visiting twelve different parties, who had given the machine a thorough test, and at last purchasing a 200 egg outfit, and completed three successive hatches, using 616 eggs, 110 of which were unfertile, forty-seven dead in shell at the last stages, and hatches 459 chicks. The investigation and trial proved more than satisfactory, and they proceeded at once to purchase the entire right and patents, which was accomplished for $3000 cash.

Their first step was to establish their own manufactory, and have every machine completed under their own supervision. Their second step was to prove the worth of the Reliable, as an egg hatching machine, to their own home community, by placing a 200 egg outfit in a show window of the largest clothing establishment in Quincy, and completed two hatches, first 168 chicks, second 145; singularly enough, this was the first and only open exhibition of an Incubator in this section.

Their third step was to apply for space to exhibit several machines at the World's Columbian Exposition. The reply to their first communication was, if one machine would display the merits of the four (which we intended to exhibit) only one would be admitted, which accounts for their not having an even more attractive and extensive display at the World's Fair. Their grand success at this great Exposition has been scattered broadcast through the columns of the leading journals, and the pretty display of lively chicks, decorated in bright colors, green, red, blue, pink, purple and yellow, is still fresh in the memory of thousands who passed their exhibit.

The favor accorded the Reliable at the Columbian Exposition is fully sustained by the fact that Mr. A. McIntyre, one of the judges in the Agricultural Department, paid the full price for a 200 egg Hatcher with Brooder combined. They now have our World's Fair exhibit arranged in our salesroom, just as it appeared at Chicago.

The number of "Reliable Incubators" sold during the first twelve months in the hands of the present owners, ending April 1st, '93 was 1562, and to-day this Company is selling more hatching machines than at any previous time. Their manufacturing departments occupy floor space, aggregating over 15,000 square feet, and at the present writing twenty mechanics are employed, only one third of the number which will be required through the months of January, February, March and April.

The "Reliable Poultry Farm" occupies seven acres of ground in buildings and yards, and is a source of pleasure to all who visit it. Last season's business in this branch of industry ending June 1st, '93 netted them $2,282 and were the farm of three times its present dimensions, they could not begin to fill orders for either stock or eggs the coming season. This proves conclusively what perseverance and energy will accomplish with a very small capitol at the start.

Two of the senior members of the "Reliable Incubator Company" have been engaged in high class poultry culture thirteen years, and their success in exhibiting prize winning specimens at the State Poultry Show, Chicago, 1889, was a feature long to be remembered by the poultry breeding fraternity.

The illustrations show the 200-egg incubator and brooder combined and a late style hot water brooder, with double extension runs. Catalogues and prices are sent free to all upon application.

THEY DO NOT LAY.

What is the matter that the hens do not lay? It is due to several causes, but the following letter from a lady reader shows that she feeds liberally but gets no eggs. She says:

"I have twenty old hens and thirty young pullets, hatched out in May or June. I only got twelve eggs during October and two eggs during the month of November. None of the pullets are laying yet. They are Brown Leghorns and Light Brahmas. I fed them scalded bran, bone meal, ground oats and ground corn meal, mixed, in the morning, and cracklings from a pork butcher. I give these alternately in the morning, and always wheat or whole corn in the evening and have a well built house to roost in but I do not have fire in it. They have free range.

Such feeding as the above is enough to make hens lay, but the fact is that the hens are given too much. If they are on a range in summer they need no food at all except about a pound of meat, once a day, to twenty hens. They cannot go on the range in winter, and hence lack *exercise*. The best way to get eggs is to make the hens *work* for their food by *scratching* in leaves or cut straw. More damage is done by overfeeding them by too little food. Sometimes the lack of eggs may be due to the large lice on the skin of the heads and necks, but this may be remedied by rubbing a little sweet oil on the heads and face twice a week.

SPONGIA FOR ROUP.

How should *spongia* be used when given for roup? This is a question which we have answered before, but which must again be noticed for an Indiana subscriber, who writes:

"As I understand it, the use of *spongia* is intended when the hens have hoarse breathing, or, as I might term it, *croup*. How much and in what manner should it be given?

What is known as the third potency is generally used. Homeopathic remedies should be used sparingly. Ten drops, or twenty pellets, in a quart of drinking water, placed where all the birds can drink it, is the proper method. Do not use more than ten drops. Use clean vessels, which should be washed and scalded every day. It is the best remedy for hoarseness that can be given.

RED PEPPER AND BONES.

Mr. C. A. Babbitt, Coldwater, Mich. makes a few inquiries which may interest others, and writes as follows:

"What is your opinion of putting red pepper in the food in winter for the hens? Also your opinion in regard to feeding lard scraps? How about feeding bone meal to them, and how much for ten hens?"

Red pepper is a temporary stimulant, and is of no service. It is not *heating* but simply pungent, and if fed too freely it may cause the hens to take cold. Lard scraps are not suitable food, as the great pressure to which they are subject removes all but the fibre, but while we so state we do not infer that they are useless but only inferior to other foods. One pound of *green* bone per day, for sixteen hens, is about the proper allowance, but of *bone meal* the hens may have a box of it within reach all the time, as they will not eat too much.

COLD STORAGE.

THE FINANCIAL ASPECT OF COLD STORAGE—VALUE OF COLD STORAGE WAREHOUSE—RECEIPTS AS COLLATERAL—GENERAL BENEFITS.

Money can be borrowed on butter, eggs, cheese, chickens and farm products of all the kinds that will keep, as easily as on diamonds and watches, says the New York *Sun*. Not only is this so, but there is a great deal more money loaned on ordinary farm products than in all the pawn shops in New York. This is a business which is growing every year, and which has now assumed such an enormous proportion that it makes up a large part of the discount line of several banks.

Cold storage and the development of the storage warehouse business in New York have made this possible. Most of these warehouses, especially the storage warehouses, are to the banks what the pawnbroker's safe is to him, only the banks act through some one else, while the pawnbroker owns the warehouse and the capital both. Until recently it was not possible to keep long in good condition dairy products, eggs and many small fruits; they would spoil if not used within a few days after they were placed on the market. The cows and the chickens do not adjust themselves to the demand of the public, which requires in the winter an extra amount of butter and as many eggs as in the summer. As cold weather comes on, the efforts of the cows and chickens are largely directed to keeping themselves warm, with the result that their contributions to the public food supply are diminished.

In the summer before cold storage warehouses existed the farmers had to send their milk, butter and eggs to the market at once, so that they would be sold before they spoiled, with the result that the prices fell to such a low point that at times the shipments to the commission merchants did not realize enough to pay the freight. There is a minimum price below which it would not pay the railroads to transport, and commission dealers and retailers to handle farm products, and that price the consuming public must pay for their benefit, no matter how plentiful the supply is. So in the summer the farmers made little money, and the New York public got only a small part of the benefit. In the winter the supply was so much less that, while the public had to pay high prices, the farmers had not enough milk and eggs to sell to reap much benefit.

Then came the introduction of cold storage and the cold storage warehouse, which is so recent that the big men in the business are still young or middle-aged, while the acceptance of butter and eggs as good collateral is so recent that young note dealers easily recall the first paper which came in with butter and eggs security.

The first effect of this innovation was to make a great deal of money for the men who had capital and relied on their own judgment and the possibilities of cold storage. They are rich men to-day, for they anticipated the future by two or three seasons. Some of the first men to take advantage of the cold storage business in this manner were produce commission dealers. In the summer, when butter and eggs were low, they bought up all they could carry and pay for, and put them into cold storage warehouses. In January and February they unloaded and made over 200 per cent. profit. They made their purchases direct from the farmers who shipped to them, and put the butter and eggs in the warehouse at once, so they came out almost as fresh as when they went in. The only reason they did not make more money was that they had insufficient capital, and the business of borrowing money on butter and eggs was in its beginning. Butter and eggs were not then regarded as good collateral. The next year the men who had made the big profits the year before went to their banks and used their personal credit to secure the money to carry their purchases. More butter and eggs were carried over to the winter season that year than the season before. Though the total amount of profit was larger than that of the first year the per cent. of it was not so high. Their purchases stiffened the prices in the summer, and their unloading made a weaker butter and egg market in the winter.

It occurred to some of the storage warehouse men that there should be some way by which they could make a profit out of the business over their storage charges. They found it when they got the banks to accept storage warehouse receipts for butter and eggs as good collaterals for loans. When this was accomplished, almost every produce man took to speculating on butter and eggs. The possibilities of the storage warehouse business developed to include chickens, game and meat of all kinds. When chickens were low, a wholesale chicken man could buy them in thousand lots and store them until the market quotations on them were higher.

The big creameries and butter factories were among the first to take advantage of this new state of things, demanding higher prices for their butter in the summer or storing their surplus product until winter. The farmers than profited by the facility with which the summer surplus could be disposed of, while the public for the first time had good butter at a low price in the winter and cheap eggs the year round irrespective of the weather or the feelings of the cows and the hens.

Now the banks will accept storage certificates for collateral as readily as they would United States bonds, when the application for a loan comes to them through men whom they know. Every month the value of the collateral increases, and about the only possibility of loss is an earthquake or a fire, and the cold storage warehouse is regarded as an excellent insurance risk. The owners can protect themselves by insurance.

A man needs very little capital now to go into a butter, eggs and cheese speculation. He buys from the farmers and at once has the butter, eggs and chickens sent to the cold storage warehouse. He goes to the owner of the warehouse and gets a loan of eighty per cent of the value of his storage certificates on payment of the storage and the brokerage fee for getting the loan. He gives a note for the loan, which the warehouse men indorse, and deposits with the storage certificates in their bank. With this money the buyer can go back and get more butter, eggs and chickens until he has enough stored to feed a country town for six months. The bank carries the loans on until winter.

Then when the rural supply of butter, eggs and chickens begins to diminish and the market prices increase the produce man gradually unloads his holdings, making sales from samples. As fast as he makes a sale he gives an order for the goods on the cold storage warehouse man. The cold storage warehouse man receives the money and takes up the storage certificates from the bank. When all the loans are taken up the produce man owns absolutely the rest of the things he has stored, and he can do with them what he pleases.

Some produce men enlarge this speculation by making contracts with their customers by the year. They agree on a price from month to month, and at those prices they agree to furnish a fixed quantity. The market quotations may be higher or lower than the agreement. The produce man's profits come in the difference between the prices at which he buys in the summer, plus his warehouse bill and interest charges, and the price he gets.

So far no one seems to have taken advantage of the possibility of getting up a corner in chickens, butter or eggs, though there is an exchange at which there is extensive speculation. A man can contract for a thousand pounds of February butter just as he can go to the produce exchange and contract for February wheat, or to the consolidated exchange and buy February petroleum. However, there is little selling short, and until the professional produce men take to selling short there is slight danger of corners. Occasionally some man tries to carry too much and fails, but where he agrees to deliver future eggs and chickens, he usually has them in the cold storage warehouse at the time, and makes the price based on the market quotations of that day and the storage charge.

The banks look more favorably from year to year on this kind of collateral, for they have had few losses. The market quotations are usually toward the increase of the value of the security, as the prices always rise from summer until spring. There is no danger of a bear raid which will smash prices and make the collateral worth less than the face of the notes. The products are easier to sell than real estate, and practically almost as easy to market as standard railroad securities. It may be well for some one to point out to the farmers who are in the habit of railing at New York banks and capitalists that if no one would loan money on butter, eggs, chickens and small farm products, only so much of these could be carried as the individual capital of the produce men would permit. Prices in the summer would be much lower. The fact that the New York banks will loan money on these products prevents the low drops in price that used to come every summer at the expense of the farmer. It also lowers the price paid by the consumers in the city during the winter, for all the farm products stored in the summer and fall have to be sold during the winter to prevent their running into the lower prices of the next summer.

For the benefit of those who wish to know where to apply for information as to cost of house, details, etc., we will mention that there is a monthly journal devoted to cold storage, under the title of *Ice and Refrigeration*, published at 206 Broadway, New York City, for a copy of which we are indebted to Mr. R. Esau, West Hoboken, N. J., who has kindly endeavored to oblige our readers who have made inquiries on this subject. We are in hopes of securing a plan of a cold storage house for publication.

A REMEDY FOR ROUP AND LICE.

H. J. MARTIN, DALLAS, TEXAS.

There are many things in the POULTRY KEEPER that are of benefit to me, and I do not wish to do without it. At the same time there are many things in the paper that do not benefit me, as the paper is published in a much colder climate than we have here, and many of the articles are contributions of parties who live where everything is frozen. Of course you expect the readers of your paper to have some judgment, and select such advice as is intended for those who keep poultry in a warm climate. If they do not know that the tight houses used in your State will not answer in Texas, of course they could not be expected to succeed with poultry or anything else. One thing I notice so much said about and is said to cause such a loss, and that is roup, which I have had often among my fowls but do not remember having had a loss from it. My remedy is to put the fowl in a coop by itself, and give it all it will eat. The water it is to drink is one part of carbolic acid to one hundred of water, and at the same time give all the other chickens on the place the same water to drink, and no other for at least one week. This month I have had two cases of roup, and with this treatment, in one week, the hens were singing in the coop, and are as well to-day as they ever were. Many of the remedies are more work than the chickens are worth. As for lice, this insect powder is too much work for one who is engaged in other business and keeps poultry as an amusement, or for his family only. Do not misunderstand me as objecting to work, but when I feed and brush my horse, attend to and milk my cow, besides many other little things about the place, I cannot take the time to dose a lot of hens three or four times a day, or dust a lot of them twice a week. Instead of this insect powder business—I see so much of and think it a very imperfect way of applying insect destroyer on fowls—I use Sheep Dip, making about ten gallons' solution, as you would to dip sheep, and dip every chicken on the place; shake them around in the dip so as to get them thoroughly wet, then hold them in it while I rub it on their heads, and the job is done. This done in the fall, and again in the spring, one will never be troubled with lice. It will take about one hour twice a year to dip fifty chickens, at a cost of one dollar to do this twice a year, whether you know they have lice or not, as lice are often present when you do not know it. I have done this and have never lost a hen from the dipping, and my chickens are free from lice, but before I tried the dip I thought I would have to move off the place for the safety of my family.

I took the POULTRY KEEPER several years ago and let my subscription run out, but do not expect to do so again. My home is on a lot 60 by 140 feet. I keep a horse, cow and fifty hens, and raised this year 225 chickens.

[The kerosene emulsion, so often given by us, will answer the same purpose as sheep dip.—ED.]

A TRUE HAWK STORY.

A. N. COSNER, NEWTON, N. J.

No doubt many of the readers of the POULTRY KEEPER are pestered with the poultry man's enemy, the hawk. If there is anything that will make a man's blood boil it is to see one of his finest chickens "scooped up," and see the hawk perch himself on a rock or dead limb and begin to devour it. Then it helps his temper to run to the house, get an old musket that has been loaded since the war, and snap a dozen caps at the thief, only to see him finish his meal and fly deliberately away. Now here is a hawk story I know to be true, and I hope if any of the friends of the POULTRY KEEPER tries this plan, they will report either to this paper or to me personally.

A cousin of mine living in Pennsylvania was pestered terribly by hawks, and after trying the "old musket," with the very result I have mentioned, I said to his hired man: "I'll bet I can catch a dozen hawks in a week." The man offered to bet anything that I could not catch a hawk in a month, so my cousin set to work to "clean 'em out," as he said. He took a piece of a stake, or a rail, about ten feet long—a round one—and left several knots on it near the top, sharpened the big end and drove it into the ground, leaving it about eight feet high. He then shaved down the top, and from two opposite sides, until it was about two inches wide. He then drove four nails in the top so as to hold a small, rusty (be sure it is rusty) steel trap, placed it on top of the pole, put the chain in a noose below the knots on the stake and left it He drove the stake in a place where he had seen the hawks sailing around considerably, in a field where there were few trees. When they went in from work at noon, they had the first hawk, who, seeing the new pole, and thinking it was put there for his especial use, stopped to inspect it and became the first victim. In the afternoon they had another, the same night they had an owl, and in just a month and two days they had caught twenty-four hawks and two owls. This sounds like a big yarn, almost like the man who shot at a partridge that flew so crooked it twisted his gun up like an auger, or the other man whose "six Billy goats," after eating a bushel of tin cans and a rod of wire fence, ate the whole lower part of his barn away and left the top sticking there in the air. But this is a real, true yarn. If any one doubts it, let him try it, according to directions, and if it does not work, let me know and I will give him the name and address of the man who told me, and they can get an old musket and have it out with him. This is a fact, and I hope it may be the means of saving many a feathered beauty, and if anyone tries it with good or bad results, let us know.

LYE THE BEST LICE DESTROYER.

C. M. TAYLOR, SANDWICH, N. H.

In the Bureau of Information in December number of POULTRY KEEPER I notice a letter from Mrs. "W. B. W.," Hanford, Cal., asking how to get rid of lice. Thinking my experience may be helpful to her, and perhaps to some others, I thought I would give it.

Last summer, while watching the fowls on the roost, I noticed they seemed very uneasy, and I determined to find out the trouble if possible. The following day I examined the roosts carefully and found, as I feared, bunches of little red and gray lice all along the under sides of the roosts, so many that in lifting them from the supports some of the bunches fell off by their own weight, and everything in that part of the hen-house was covered with millions of the tiny steel-colored eggs. Then began a siege, and for some weeks it was doubtful which would come out first-best, but the question is settled now. For months I have not been able to find a sign of a louse. I first took the perches out, turned kerosene oil over them, then burned them over, and, in fact, turned the oil over almost everything and continued so to do day after day, and, although it thinned their ranks somewhat, this treatment failed to exterminate them. I then tried barrels of boiling water, suds, carbolic acid, etc. The kerosene oil would kill all the live lice but would have no effect on the eggs, and, as they would keep hatching out, of course there would be a new crop every few days.

At last I tried lye. Two applications cleaned them out entirely. Had I only known this remedy sooner it would have saved me days of hard work. I put two quarts of wood ashes to a gallon of water; let it heat up on the stove, stirring often, and when boiling hot, painted it on with an old paint brush wherever there were any signs of lice. I found afterwards that the lye did just as well after it became cold. In four days' time not a sign of lice was to be found. The mud left in the bottom of the kettle I filled in all around the ends of the roosts, and, as they would not pass over that, those that came off from the hens at night were obliged to stay on the roosts, where a dose of the lye destroyed them the next day. It is a very simple remedy, and I am sure that if anyone troubled with these pests will give it a careful trial they will never care to use coal-oil again.

TWO STORY POULTRY HOUSES.

S. S. BARRIE, MONT VALE, N. J.

You have spoken disparagingly of two-story poultry houses. I have both kinds, but would not know how to do without the two-story house for laying hens. For convenience in keeping the building clean it has great advantages. While the hens are below the upper rooms can be cleaned, and after the hens go to roost the lower apartments can be put in order. I would as soon eat my breakfast in a bed-room as to have my hens eat and lay eggs in the roosting room. I do not think eggs or chickens are wholesome food where the fowls have access to the barnyard manure heap. By strict attention to these and kindred matters, I have customers for eggs at thirty cents per dozen in summer, and sixty cents in winter, and for six to two months chickens, I get thirty cents per pound dressed, customers paying express charges. City people are getting more and more averse to purchasing store eggs and dressed poultry, taking the chances of being poisoned.

WILD TURKEYS.

J. A. ROBERTS (ADDRESS NOT GIVEN).

Turkey management by the Rhode Island Experiment Station, and introduction of wild blood given in POULTRY KEEPER, was very interesting, and will do doubt be read by turkey raisers with interest. The habits of the wild bird correspond so closely with my observations that I thought I would give my knowledge of what the wild birds' habits are. A man in North Carolina wrote me last winter, stating he had a pair of domesticated wild turkeys, raised by a dunghill hen; said they would eat out of his hands and never left the flock of fowls. He said he came by them in this way: On clearing a piece of new land, he went to a brush heap to burn it, when, to his surprise, out ran a wild turkey-hen. He looked into the brush heap and there found a nest with nine eggs; these he took to the house and put them under a dunghill hen and she hatched seven birds. This was rather late, or what we would call here "second crop birds." They grew and did well until the hawks began to take them and carried off all but this pair, and being so near the large timber, which abounded with wild turkeys, he thought he could not keep them—when spring came, and they heard the wild gobblers, they would stray to the woods. So the party wrote me if I would take them and send him a pair of pure-bred poultry for them. I had no suitable place for them, but wrote him to send them on. The cooping and shipping, although they had been quite tame, thoroughly aroused their wild nature, and when I received them, and put them in a large coop, I never saw wilder birds; they even bruised their heads and feet trying to get out. Crows caught and penned up would have been tamer; they gradually became more quiet as the season passed, and now roost near or in the chicken-house, as they choose. The gentlemen said the natives told him that the wild turkeys did not breed until two years old, and as these were late and small, such was the case. The gobbler now has a very glossy, bronze plumage. Late in the summer he showed signs of maturing, began to strut and gobble; although they have the chances to stray off, they never leave the place, and eat with the chickens. These birds are not as large as the pure bronze, are built more erect and have the true, wild color, and shape of their ancestors. I may give more account of these birds later on, and hardiness of half-bred wild.

SNAILS AND LIME.

C. BURKART, LUTHERVILLE, ARK.

A short time ago an article came to my notice describing the manner in which snail-farms are conducted in Switzerland. After giving a detailed account of how they are managed, the writer informs us that snails require a feeding place, rich in limestone. Where nature has not provided such a place, unslacked lime must be fed, otherwise they have nothing with which to build their houses, and consequently die. Snails, he further states, having plenty of lime, have a better appearance, and consequently command fancy prices. The writer nowhere states that they require lime to grind their food, or to aid digestion, but to furnish the material of which their houses are formed. I will candidly admit that my knowledge of chemistry is woefully wanting. I have never scientifically dissected snails, and all I know about the anatomy of fowls is only sufficient in aiding me to transpose the most juicy and tender part of their bodies from the large platter in the centre of the family table to——my wife's plate. I furthermore know it would be untenable to say what a snail can do a hen can do, for I know she cannot, but does it not look as though there were a certain analogy between the house (shell) of a snail and the shell of an egg? I know it would be asking too much of you, Mr. Editor, to equip out and conduct an experimental snail farm, but won't you just brood over the subject a while, and then give us the result of your meditations? Or have you, in the language of Mr. Donough, "exploded this subject long ago?"

[We fear that our education on snails has been too sadly neglected, but we will meditate.—ED.]

HE FEEDS TOO HEAVILY.

SAMUEL WALTON, BARNESVILLE, OHIO.

I have lived on a farm, on the edge of the town, and kept chickens for thirty-seven years, and have been reasonably successful in raising chickens, my greatest losses having been from gapes; but not being very successful in getting eggs in winter, I commenced taking the POULTRY KEEPER to learn how to do better. I had my first hatch about April 15th, and now, November 5th, seven and one-half months, I have a fine, healthy looking set of pullets and not an egg. I had two Plymouth Rock cockerels, so my own eggs are Plymouth Rocks, or half blood, some pure white from four White Leghorn hens, and some Buff Cochins from eggs I purchased. They have run in my fruit and vegetable garden, and were fed oats ground and bran with ground bones, when I could get them, and averaged twice a week; also slops from the house, but no corn. They are large, full grown, and have looked as if they ought to lay. I had seventeen hens in the spring; had 331 eggs in four months; five months, 286: six months, 227; seven months, 180; eighth month, 166; ninth month, 118; tenth month, eighty-three, and eleventh month, forty-eight. I suppose have averaged twelve, at least, that were not setting or broody. They have had free range, fed wheat, ground bone and ground oats and bran, and for a month or more have had chaff in chicken houses to scratch in. Three White Leghorns layed when all the rest had quit, then they moulted and quit, but have had a fine suit for a month as have all the rest, but only one large, fat looking Plymouth Rock hen has laid an egg daily since November 10th, nearly a month ago. It looks like the big tales of 200 eggs a year to a hen are like the big yields of butter I have read of but have never seen. I have built two more houses so as to not crowd, and have made them as tight as I can with tarred paper, the lining well fastened with laths. I have, for some weeks, fed a hot mess in the morning, of clover heads with bran and oatmeal, also linseed meal. I scatter a little wheat in chaff at noon to induce them to scratch, and have recently gotten some oats to feed. I now give them water in a gallon tin paint bucket, and have thought of making a case to set them in so they would not freeze so readily. I have been told that I do not feed enough, but I think the opposite.

HEAVY CAPONS.

C. A. THIEMAN, N. AMHERST, OHIO.

I would like to learn, through the columns of the POULTRY KEEPER, if it makes a difference in the hatching of eggs (in regard to sex) if the male is young or old. I am troubled in getting pullets from my own eggs, my hens being one, two and three years old, but I have always had a young male. Now I wish to learn if it will be otherwise if I used a male two years old. Would I be apt to receive more pullets than cockerels from the hatch? I have four fine pullets hatched April 20th, that commenced to lay October 1st, and have layed every day since. Is not that good for Plymouth Rocks that have not been forced any? I also dressed three Capons November 28th, that were hatched April 30th; the weight combined was twenty-five and one-half pounds. They were three-fourth Plymouth Rock and one-fourth Light Brahma. I have two more of the same cross that weigh ten pounds each, and one Brahma that weighs eleven pounds; this last one was hatched May 30th. Now if any of the POULTRY KEEPER readers can do better, let them trot out their stock. Please inform Mrs. "W. R. W.," Hanford, Cal., that if she will give her chickens a good dusting in air-slack lime she will get rid of the lice very quickly. Use a soap-box and roll Biddy right in it; fill the feathers good and full and let her go. The lice will go also.

I noticed in December number of your paper an account of small eggs by J. C. Clark, Norman, Okla. He speaks of an egg that weighs 186¼ grains. Now, I can go him one better, only I cannot give the weight. On cleaning my coop one morning I found in the droppings an egg, perfect in form, that is, in the white and yolk, that would not fill a common thimble. The shell was very brittle, and broke as I picked it up; the contents would not more than have filled a teaspoon one quarter full. Now this is nothing to boast of, as to my knowledge, as it says my hens are fat, but this is still in the lead.

VENTILATION—A LARGE POULTRY HOUSE.

M. F. STELLWAGEN, ST. IGNAC, MICH.

I take delight in your last POULTRY KEEPER; glad to see you hit out regarding the A. P. A., sheep deal, etc. I am taking your advice in regards to the cold, fresh air, and think it is *good*. I have placed a second roof ten inches above the first one on my poultry house, and find that no cold comes down through the roof. Now, last season the frost would gather inside of roof and made my house very damp. I do not anticipate any such trouble this season, and, if I had not left my windows out too long, would not have had a sick bird this fall. My house is 104 feet long, thirteen feet wide and is divided up into ten pens. I have an alley the entire length of the front side, and have a door in each end; these I swing open each morning and the room is instantly filled with fresh air. Then I close one or both, according to the weather. Our winters are very severe here and my house is all double, with tarred felt on the outside and oiled sheating inside, which makes it a very comfortable place. Notice your comments about the judging at World's Fair. I wish you were here to judge my birds. I just had one sent from the Ionia Poultry Show (only sent down one Black Minorca cockerel), score 94½; tie for first prize. I am bound to bring my birds up to any in the United States. I am unable to hatch such early chicks as the Southern brethren, but they cannot produce more hardy chaps than I can.

STOP THAT TIRED FEELING.

G. BURKART, LUTHERVILLE, ARK.

In the December number of the POULTRY KEEPER Mr. Greverus, of Wisconsin, endeavors to persuade the readers of that paper to believe that the "breaking up" of a broody hen is a cruelty warranting the interference of the Society for the Prevention of Cruelty to Animals. In his opinion broodiness is the emphatic cry of exhausted return for well-merited rest. What large amounts of rest some hens do require. I have in mind several hens of mine which are almost continuously clamoring for "rest," and yet they have been seldomly convicted of making an exertion to fill the egg basket. They remind me of an indolent neighbor who vows that he is not lazy, but only "born tired." Those tired people, who, like Mr. G's. hens, continually need rest, are the ones Solomon addressed himself to when he assigned "a time for work and a time for rest." Far too many misconstrue the wise King's words, insomuch as they appear to persistently overlook our first part of Solomon's admonishment, *i. e.*, "There is a time for work." It is true that a broody hen does look and act extremely tired, and I do not doubt in the least but that she actually believes she requires rest, but, believe me, Mr. G., she is only duping herself and others. Her broodiness is not a result of that "tired feeling," 'tis but the freak of a diseased mind.

Brief Remarks from Readers

In This "Experience Meeting" the Editor Listens and Learns.

Scotch Terriers.—If L. J. B., of Fort Madison, in regard to getting rid of varmints, will get a good pair of Scotch Terriers, they will do the work for him.—*G. J. Boyd, Herndon, Iowa.*

Will Keep Over a Hundred.—I will keep this winter 110 pullets, and if I can keep on making money with that number as I have with thirty or forty, I will then keep more. Send me your three papers combination.—*J. W. Grimes, Davenport, N. Y.*

Good for the Lady.—I take a great interest in poultry, and have a good poultry house. My flock consists of 200 fowls, mostly Plymouth Rocks, some Wyandottes, and some Mongrels. I raised 100 Pekin ducks last summer and also some Bronze Turkeys.—*Mrs. B. Miller, Muscatine, Iowa.*

Ventilation.—I have often spent hours trying to discover the best mode of ventilating a poultry house, and when disease appeared I at once attributed it to foul air, and gave more ventilation. Your persistent attacks on ventilation, Mr. Editor, induced me to shut up the poultry house in winter, and keep the cold air out. Since then I have had healthy fowls, but I was an "ignoramus" before that for twenty years, killing my hens every winter.—*John Batcson, Detroit, Mich.*

Cold Climate Best.—I have started in the poultry business on a large scale and will send for some of those books later. You will think I am crazy going into such a business in this cold country, but experience has taught me that this is just the climate to raise poultry in, as the air is dry and clear. I have had fifteen years' experience in other countries, and four years in this, and find this "downs" them all. I have imported twenty-four distinct varieties this summer and they are doing fine. I think I can manage them all on a 160 acre farm, high and dry, lots of gravel, shade trees and pure water.—*William Jones, Austin, Manitoba.*

Believes in the Breeds.—I feel very grateful to the editor of the POULTRY KEEPER for the many excellent articles and good points which you have always given in the past numbers. I suppose you would like to know how many fowls I have, that is, of fair stock. Well, the list is as follows: Four pure Black Langshans (pullets), one laying; six pure Black Diamond Langshans with cockerel; two Brown Leghorns with a red cockerel; three Light Brahmas with cockerel; six Barred Plymouth Rocks with cockerel; twenty-one in all, that I call quite good quality. This coming spring I shall try to sell off all of the poor stock so as to make room for the new and good stock. I am greatly in hopes that I will have better success this year than I had last year. I wish to ask if you are acquainted with the *American Stockkeeper* editor.—*G. M. Wilson, Nebraska City, Neb.* [Yes—a good man too.—ED.]

Will Try Large Numbers.—I wish to say that we peruse every article you publish in your valuable paper, the POULTRY KEEPER, and try to follow your directions. My wife has the credit for raising the chickens, as I follow Public Works for a living and have not the time to devote to them. We own five acres of land, with a good, substantial house thereon, within a couple of miles from a town where we have always had a good market for chickens and eggs. We kept common chickens until this year. We now have some very fine Black Langshans and intend to try and breed those exclusively. We have three houses for chickens—one ten by twelve feet, six feet at eaves and ten feet high in centre; another eighteen feet long by eight feet wide, six feet high in front and four at rear; another eighteen feet long by twelve feet, eight high at eaves and twelve feet high in centre. I intend to keep a record of eggs laid from the first of the year from a given number of hens. Would like to increase our stock to 500 next year.—*J. E. Ashley, Lindsey, Pa.*

A Turkey Laid Eighty-Five Eggs.—In the February number of the POULTRY KEEPER you state that "The turkey usually lays about twenty eggs (per year), but individuals sometimes excel that number." Now, that may do for your Eastern turkey, but "it does not go" out here. I have a common gray turkey-hen that during the first nine months of this year laid eighty-five (85) eggs, besides hatching a brood of little turkeys, and another of chickens, thus spending seven weeks of that time in sitting. While laying she would lay two eggs in successive days and then rest one. I also have another turkey that during the first week of this month laid six perfect eggs in six successive days, and is now sitting on them. There is no mistake about these statements, for I kept the record myself. From my experience with turkeys, I am inclined to think that, in this section at least, the common turkey will average as many eggs, if kept laying (if not permitted to set), as will the common hen.—*Geo. P. Price, South Pasadena, Cal.*

Cleared Eighty Dollars.—I like the POULTRY KEEPER very much. A couple of years ago I commenced to keep hens with two old hens and a rooster. In eighteen months I cleared $80 (not counting my time) over and above what they ate.—*M. L. Freeman, Acushnet, Mass.*

Keep It Coming.—Send the POULTRY KEEPER right along; I cannot do without it. It is worth more to me than any paper I take. I have always been a great lover of fine poultry and hogs, and the POULTRY KEEPER is always full of instruction to me.—*Jno. L. Bonner, Stewart's Mill, Texas.*

Light Brahmas.—I have been a reader of the POULTRY KEEPER for nearly three years and must give it all the praise, for I have received many good points on raising poultry and feeding for eggs. I have the Light Brahmas and Black Langshans. Would like to know if a black peak (?) on Brahma disqualifies it, and if the whiter you can get them the better?—*S. B. Rutt, Wahoo, Neb.* [A dark upper mandible is desirable.—ED]

Nearly 3000 Eggs.—Although I make no pretentions or progress, I like your paper. I like to know what others say and do. Last year, 1892, from January until January, 1893, I started with about twenty hens; took good care of them and had a little over $41, just on eggs. This year, 1893, my eighteen hens laid 2,853 eggs from January 1st to November 30th, 1893. Thank you for your help.—*Eunice Rich, Newfield, Pa.*

Made a Mistake.—Have built a poultry house 16x24 feet, two stories high, and intend to add fifty feet to it in the spring. I was a subscriber to your paper when you sent out a cut of your incubator; have used it two years with good results. I am keeping seventy-five Brown R. C. Leghorns; I think they are the best for eggs and a general purpose hen. I missed it sadly when I stopped your paper. I took three others and found yours to be worth all the others. Will write some of my experience in poultry at some time, as I have been in the business some thirty years, if you would like me to do so.—*S. S. Carpenter, Bingham Centre, Pa.*—[Glad to hear from you.—ED.]

His Paper Did It.—I find I cannot get along without the POULTRY KEEPER and raise poultry. I tried for three years to raise broilers with incubators and brooders and made a complete failure until I subscribed for the POULTRY KEEPER, but since I got the paper and your work, "Management of Young Chicks," I have learned how. I have also learned how to handle roup, which is so bad in California, thanks to the POULTRY KEEPER. The roup pills you mention in "Poultry for Profit," and the turpentine, coal oil and glycerine mentioned in the POULTRY KEEPER, roup is not now as bad as it might be. I have no desire, however, to get it among my flock again.—*J. S. English, Los Angeles, Cal.*

Alum Water for Sore Heads.—In reply to Mr. A. P. Chamberlain's question for a remedy for sore head, canker in the mouth, etc., I will state that I have raised poultry for a number of years, here in Texas, and the same disease used to trouble my fowls every fall. The common fowls were affected the most. Since I quit breeding anything but thoroughbreds the only ones affected are the Polish breeds. When I notice any chicken afflicted, I wash the sores with very strong warm alum water, and two or three applications will cure them. At the same time I feed sulphur in bran, for a few mornings. Last month a Golden Polish hen was taken with the disease. One side of the head was one sore, from crest to bill. Two washings with the alum water cured her. A few days ago two chicks had their eyes swelled shut, with the same trouble, but I cured them with two applications.—*M. A. De Mauri, Gainesville, Texas.*

Eggs Should Be Tested.—I have been a subscriber to the POULTRY KEEPER for eight or nine months and like it very much. I do not think we could do without it. I persuaded a neighbor to take the POULTRY KEEPER last spring and she raised 138 turkeys this year. She says the POULTRY KEEPER did it and she never had such good luck before. Now I see a great deal in the paper about egg-testers. I thought I would tell you of the one our grocer makes for that purpose. It is a splendid one and a great many have been sold in this western country. One-half dozen eggs can be tested at one time. It will count the number of half a dozen correctly. I think it would be excellent for "incubator men" and grocers. We are very careful about gathering the eggs. Last fall I sold some to our grocer and he commenced to test them. I said: "You need not test those eggs as I will guarantee them to be good." He took one and put it on the tester and told me to look at it. I did so and it was as black as a hat. This tester shows very quickly the condition of an egg. They have a machine for making this tester. I may describe it (the tester) some other time. Said tester is patented.—*N. W. Arbogast, Minier, Ill.*—[You should have described it or the owner should advertise it.—ED.]

For South Jersey Breeders.—I would like to see some of the breeders in South Jersey advertise their birds and eggs for sale. Would purchase more if I could get them nearer home.—*Samuel G. Harris, No. 23, N. Mississippi Avenue, Atlantic City, New Jersey.*

Has a Big Flock.—That you may know something of my responsibility or standing, or whatever you may call it, I will say I have a farm of 100 acres worth $18,000 and am in the chicken business to turn my grandsons' habits of application to business. We had in 1890, 100 pullets or hens; 1891, we had 200; 1892, 300, and this year, 1893, 400. My boys keep an accurate account of all receipts and expenses. Some of our experiences might interest some of your numerous patrons, which we might give you at some future time, if wanted. We think most writers on this subject make a great mistake when they hold out the inducement to new beginners that pullets hatched in April will lay at five or six months old. A very few will, but the flock as a whole, will not be sufficiently developed in this section until they are eight and one-half months old.—*John L. Chase, Johnson's Creek, N. Y.*—[We will be pleased to have you write.—ED.]

Coal Tar for Lice.—The first letter on the last page of the December number of the POULTRY KEEPER from Mrs. W. R. W., of Hanford, Cal., is only pathethic. Two years ago I purchased an innumerable stock of gray lice to get a few good hens. The lice soon found pastureage on everything that wore feathers. They soon located homesteads on some 200 chicks hatched in an incubator and sheltered by wire nettings. The old hens could fly up on the netting. Not more than twenty per cent. of the chicks lived. I used every insecticide I ever heard of but of no avail. Lice, lice everywhere, and the diseases which follow. I whitewashed, used crude petroleum on the roosts, then coal-oil and carbolic acid, but the pest was not abated. Finally I procured a can of coal tar and painted the roosts. The squatters made haste to vacate their claims. In a few weeks there were no visible lice about the place. On my present flock, some 165, including many of the old lice infected, it would be hard to find a louse. The coal tar is so sticky that the little red lice (or chicken bed-bugs) are at once destroyed. The strong fumes of the coal tar penetrates through the feathers and speedily dislodged the gray lice. As coal tar is the substance from which carbolic acid is extracted it is one of the best disinfectants which can be used in the poultry-house. Coal tar can be thinned, so as to be more easily applied, by melting it with lard, and can be spread on with a small paint brush. Put none on the top of the roost, as it sticks fast to the feathers and feet; apply to the bottom and sides. I never heard of the use of coal tar for lice until after I had blundered on the experiment myself.—*W. A. Tenney, Oakland, Cal.*

COLD AND YOUNG CHICKS.

Many of the young chicks in the brooder, and under hens, die because they take cold—become chilled—and the result is cold on the bowels. Then, again, some are constipated from lack of variety. Here is a case from Colorado:

I have raised some young chicks this spring, seemingly well and hearty, but when three or four days old their rectum closes up and they linger along and die. I have oiled the parts and given them oil in their feed, but was unsuccessful. I have opened some and find their rectum gut dry and hard. I feed from three to four times per day with good corn bread soaked in sweet milk.

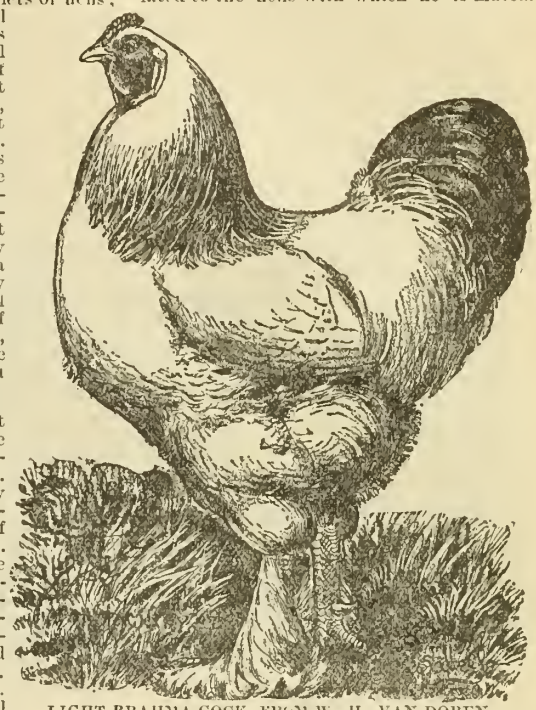
The probability is that the oil did more harm than good. The proper plan is to add a gill of linseed meal to each pint of the ground grain. It is probable, however, that the cause of loss is due to insufficient heat in the brooder.

THE WEBSTER WHEELBARROW.

Mr. P. A. Webster, Cazenovia, New York, has invented a wheelbarrow that is light enough to be picked up off the ground, as it weighs about twenty pounds, but it is so strongly made that it will hold a load of 200 pounds. He considers it just the thing for poultrymen who haul loads up and down the passageways of poultry houses, and is also very cheap. The wheels are as light as those of a bicycle, yet are high and have tires that are wide enough for practical use. Send to him for descriptive catalogue, which is free to all.

MR. VAN DOREN'S YARDS.

Mr. W. H. Van Doren, Buckingham, Illinois, is an old breeder of many years. The cock, Bismark III, was bred by a mating of Felch and Ripon strains. He took first wherever shown. He is not related to the hens with which he is mated.



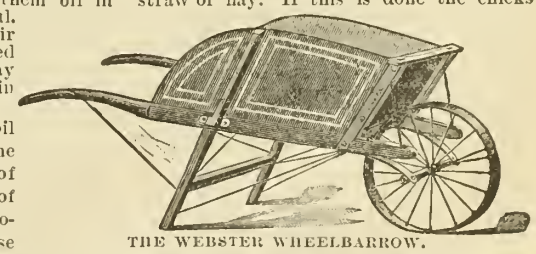
LIGHT BRAHMA COCK, FROM W. H. VAN DOREN, BUCKINGHAM, ILL.

Mr. Van Doren also has some fine Plymouth Rocks, sired by his noted bird "McKinley," which are hard to beat. He makes a specialty also of White Leghorns, the famous "Utica" being the sire of some of them. Mr. Van Doren thinks his present White Leghorns the best he ever had in his seventeen years breeding, the combs all being good and the plumage very white and clear. He is well known in his section and many prize winners have come from his yards.

A POINT ON BROILERS.

Young chicks bring the highest prices in May, but bring good prices from January to July. Here are a few rules to follow.

Don't crowd them. Fifty are enough together. Keep the brooder at not *less* than ninety-five degrees. If they have weak legs give them cut straw to scratch in, scattering a little millet seed in the straw. Weak legs often result from too much *bottom* heat. One of the greatest mistakes in raising chicks in brooders is that the floors are usually too warm, the result being leg weakness, and the chicks that are down become trampled by those that move about under the brooder. All the losses of chicks seem to occur at night, which is proof that whatever destroys them does its work at that time. The chicks are apparently healthy, and go under the brooders in good condition, but in the morning quite a number are found dead. The warmth should be over the chicks, not under them. Earth floors are the best, which should be covered with cut straw or hay. If this is done the chicks will not only rest easier at night and remain quiet until morning, but the cases of leg weakness will be materially reduced.



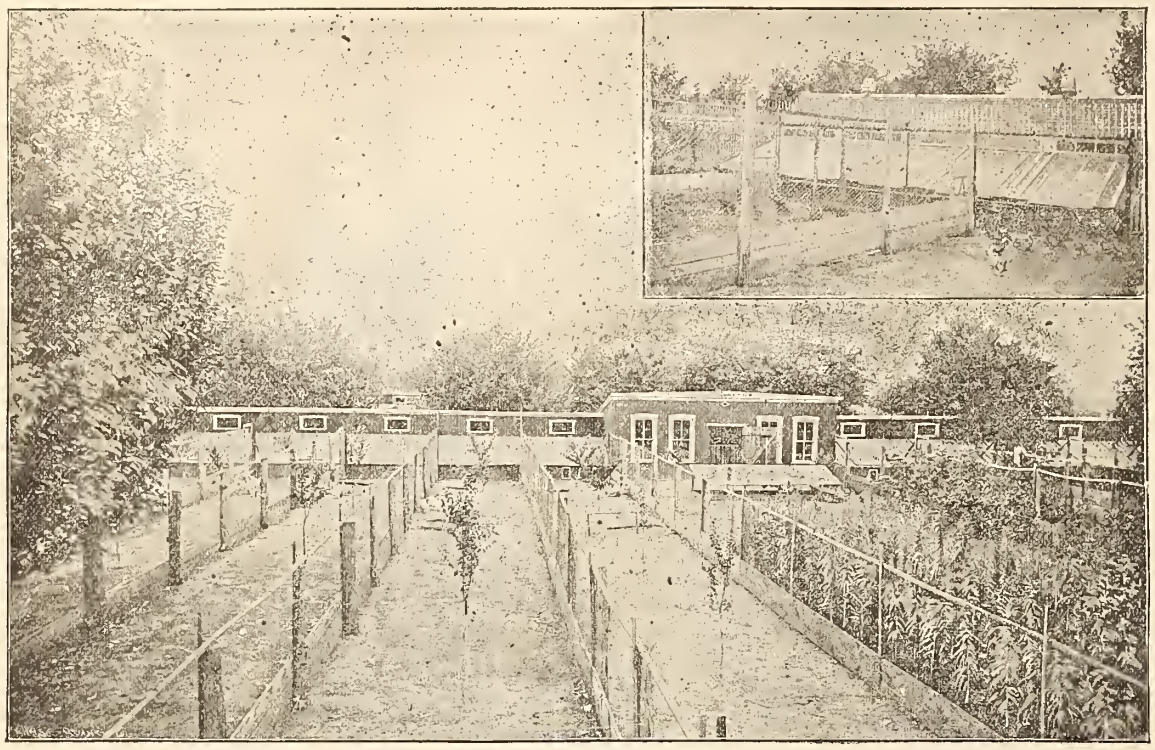
THE WEBSTER WHEELBARROW.

In several experiments made by us, we find that when little chicks are given dry food instead of moistened they thrive better. Those who have attempted the care of several hundred chicks know that the labor of mixing the food and moistening it is quite an item in the expense, and if dry food can be used exclusively there will be a saving of labor and time. When the food is damp, the chicks are compelled to consume more water than they should.

Don't forget to send for our October, 1889, issue, which contains the "Forty Rules for Raising Broilers," as it will be invaluable and cost you only five cents.

THE RELIABLE POULTRY YARDS.

The Reliable poultry yards are owned by the Reliable Incubator Co, Quincy, Ill., and became a necessity, owing to the great demand of its patrons for pure breeds, They have nearly 400 birds, including Light Brahmas, Partridge Cochins, Buff Cochins.



THE RELIABLE POULTRY YARDS, QUINCY, ILL.

Barred Plymouth Rocks, White Plymouth Rocks, Black Langshans, Golden Wyandottes, Silver Laced Wyandottes, S. C. White Leghorns, S. C. Brown Leghorns, White Imperial Pekin Ducks, Toulouse Geese. In this connection here is what they say about "Getting started in the Poultry Business." "Getting started in the fancy or thoroughbred poultry business is an easy matter. This is so mainly because so many people are interested in and fond of fine poultry. It is really astonishing how many people of all classes and conditions visit our farm every year. They range from rich bankers, merchants and professional men down to day laborers, who are looking for some respectable way in which they can earn a few extra dollars. Farmers by the score come to see us. They are among our best customers.

To every person starting in this branch of the poultry business, his or her poultry yard should be the center of the universe. The next door neighbors will be the first customers. Friends and acquaintances will come to see the thoroughbred flock; they will admire them and buy eggs. Be careful not to sell too many eggs while your flock is small, for you will find it profitable to raise as many chicks yourself as possible. Raise 150 or 200 the first year from an average pen if you can and you will have from $300 to $500 out of your first year's work, the amount of profit depending on the breed you select and the quality of fowls you buy.

Your first house should cost you very little. It is seldom that a shed, or part of a shed, or one corner of a barn cannot be spared for a pen of fowls. Partition off a section ten feet square; put an ordinary window in the south or east side; line the inside walls with folded newspapers; whitewash thoroughly, put up roosts and nests, see that the floor (a dirt floor preferred) is thoroughly dry, and the problem of a suitable home for the first flock is solved. The expense is small. We have known several persons to invest $50 in thoroughbred poultry and make the first year from $400 to $550, nothing being deducted for feed or labor. On the farm the feed is not missed. Where all the feed has to be bought, one dollar will keep each fowl one year. As for the labor, less than two hours a day is required on an average to care for the fowls, old and young.

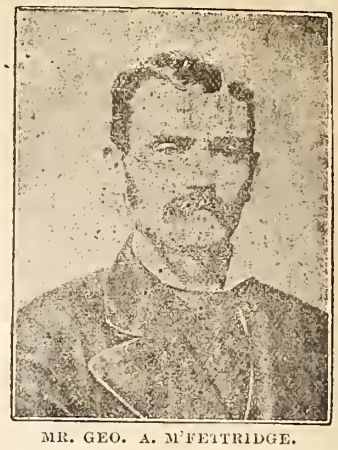
There are two especially good places in this world to raise poultry—in a barnyard and around a kitchen door. The first pen of birds can be kept, almost, on the scraps that come from the average kitchen. If the owner keeps a horse, or a horse and cow, the fowls will thrive around the barn and kitchen at small expense for food,

The first year a small advertisement inserted in a newspaper will enable you to dispose of your surplus stock. You will want to keep your old birds for two more years' breeding, and also one or two pens of the best of the young stock, as you will wish to enlarge your business from year to year.

By following the simple and easy plan here briefly outlined, any person of average intelligence and industry can get a start in poultry culture that can be developed into a business that will pay from $1,000 to $5,000 a year. There are breeders in this country to-day who have cleared $8,000 in one year, and the business is only in its infancy."

A Precocious Chick.—I have a young rooster, one month old, out of an egg that was purchased, which looks like a Plymouth Rock, that is an extraordinary fighter. The day he was four weeks old he crowed, and has been crowing every day since.—*Frederick Robinson, Chicago, Ill.*

McFETTRIDGE, THE DUCK RAISER.



MR. GEO. A. M'FETTRIDGE.

We present the countenance of Mr. Geo. A. McFettridge, Strondsburg, Pa., who is famous for raising 20,000 ducklings in one year, while superintending the Hallock duck farm on Long Island, but who has been recently "called" to a large establishment at Stroudsburg, Pa. At one time he had thirty-two Prairie State incubators in operation at one time, and he knows "all about a duck." That reminds us that he has written a book which we style "McFettridge's Duck Book," the price of which is fifty cents, but which we send with the POULTRY KEEPER for one year, at seventy five cents. Below is the contents:

"All about the temperature for hatching; moisture; ventilation; how to trim the lamp; time card for incubators; brooding small chicks; food and care of ducks for breeders; feeding hens for hatching eggs; eggs for hatching; how to feed little chicks; how to feed young ducks; how to dress ducks for market; how to dress young chickens; the incubator house; brooder house; celery for feeding ducks; short notes; economy; sanitary conditions and medicines."

This book is not written so much about what should be done as about what has been done, and it is worth $10 to anyone interested in ducks. In fact, a single duck pays for the book. It is for sale by us, and we believe it one of the best books published.

PARTRIDGE COCHINS.

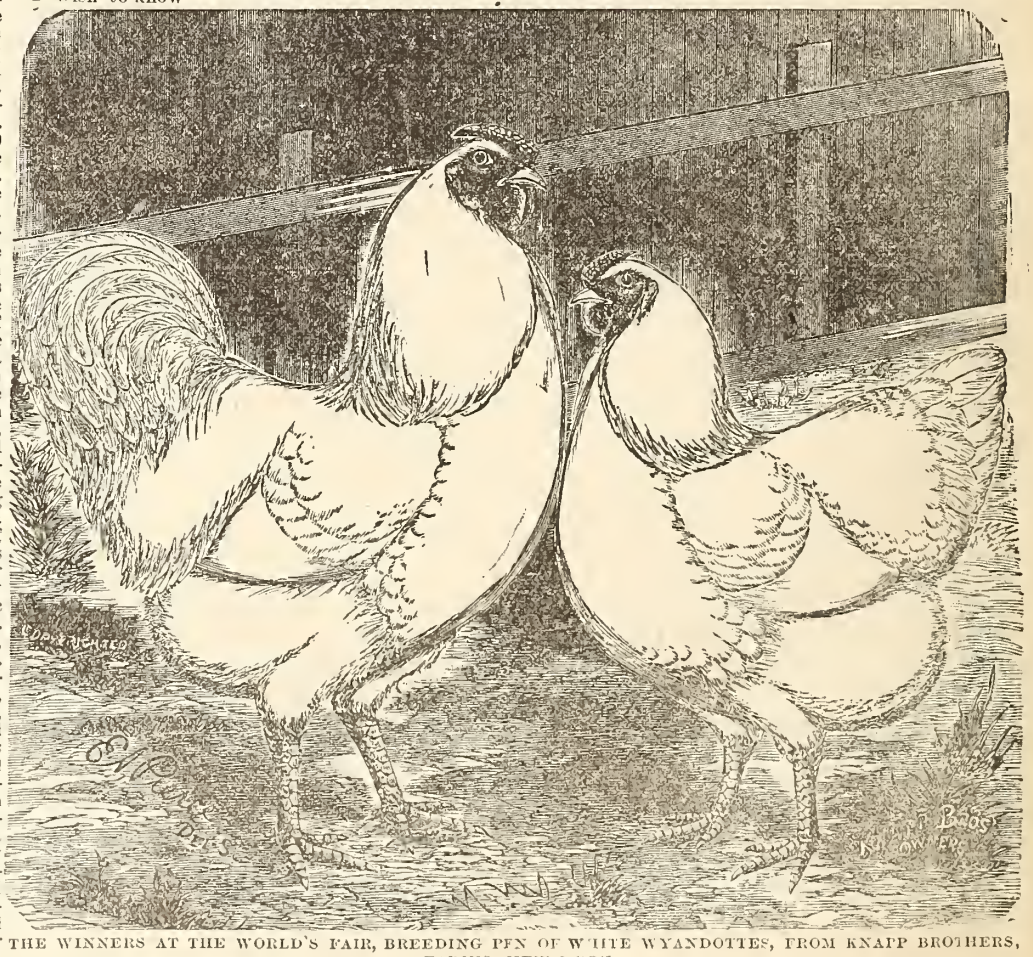
Mr. Charles Hughes, of Montreal, Can., asks the following questions:

Will you allow me space in your valuable journal to ask a few questions and to obtain information in reference to the Partridge Cochin. What I wish to know is, where did the Partridge Cochin get the feathers that are on its legs? It is now forty years, and past, since I purchased, with a friend, a trio of Chittagongs, so called then. The price paid was $50 for the trio. They were purchased from a Mr. S. P. Burnham, of some city in New York State, which I have forgotten.

Now allow me to give you a full description of these beautiful fowls They were exactly the color, in every way, of the present Partridge Cochin. They had a beautiful pink leg, with scales, exactly like the wild turkey, not a sign of a feather on the legs, no hocks; weighed rooster, twelve to fourteen pounds; hen, nine to ten pounds; the egg was small for such a large fowl; the color of the shell of the egg was a very dark coffee color intensely dark. Now where have all those Chittagongs gone? Mr. Burnham, Mr. McLeod, Mr. Cornosh and Dr. Bennett were all professionals, I call them, and they, after a time, advertised and sold different kinds of fowls the Asiatic Breeds, and gave them, I am satisfied, names of their own making. Those gentlemen used to keep up a continual controversy and bickering with relation to these fowls. I will not make this article any longer, but will give you proof further on that the Partridge. of to-day are the identical Chittagongs of forty-five years ago. I will conclude by saying I never was a professional, but a most ardent fowl fancier since the age of fifteen. Will some of your fanciers know.

[The changes have been made by crossing and selections, the Chittagongs, Shanghais and Brahmas—pootras being bred together. —ED.]

They are Good Breeds—I have been in England recently (was born there) and in one yard, three years ago, I saw the plumpest fowl I ever beheld. I think it was a White Indian Game. It had no breast bone at all. The Plymouth Rocks I find to be capital fowls, and a cross with them and the Blue Andalusians is excellent, though the latter does not breed true to color.—*A. S. Goodacre, Grand Pre., Nova Scotia.*



THE WINNERS AT THE WORLD'S FAIR, BREEDING PEN OF WHITE WYANDOTTES, FROM KNAPP BROTHERS, FABIUS, NEW YORK.

KNAPP BROTHERS.

The reputation of Messrs. Knapp Brothers, Fabius, New York, for White Wyandottes, White Leghorns, and Pekin Ducks, is widely known, as they usually clean out the show. They have taken nearly a thousand prizes. It is unnecessary for us to say more They also won on White Leghorns at the World's Fair. They will be at the Great Madison Square Garden Show this month, and as they have become accustomed to winning nearly everything wherever they show, we almost naturally give them the awards in advance.

MR. GAMMERDINGER'S LARGE ESTABLISHMENT.

No breeder can boast of a better record in the show room than Mr. Charles Gammerdinger, Columbus, Ohio. There is not a year that he does not win over $1,000 (sometimes $2,000) in the show room, and there are few breeders who can boast of better stock. He is an enthusiastic breeder and takes pride in sending his customers the best to be had. He breeds not only Wyandottes, but Light Brahmas, Dark Brahmas, Black Spanish, Buff Cochins, Rose-Combs, White Leghorns, Javas, Brown and Black Leghorns, Langshans, Houdans, all the varieties of Polish and Hamburgs, Crevecœurs, Games, Sumatras, Plymouth Rocks, as well as Ducks, Geese, and Turkeys, not even forgetting the Bantams.

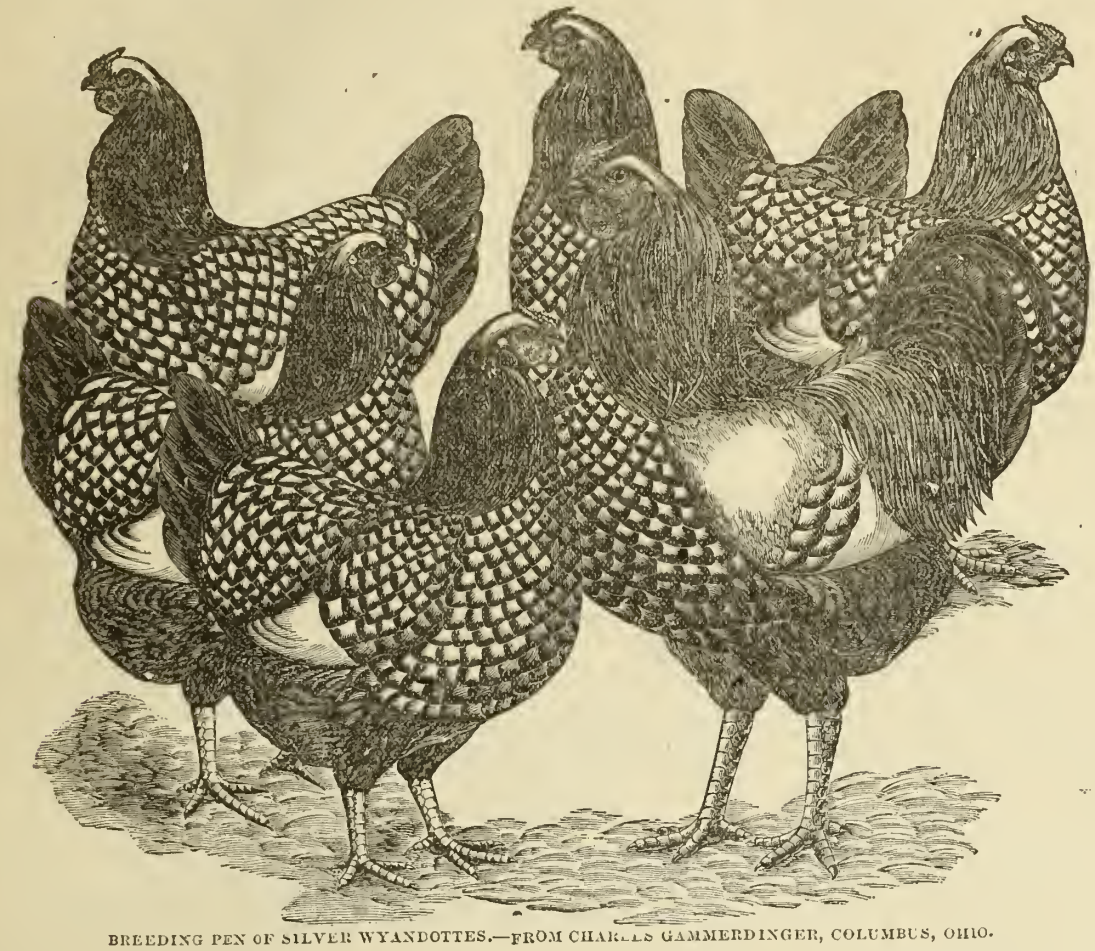
Mr. Gammerdinger has eleven large poultry houses. Of his Wyandottes he says: "This breed has so many good points to recommend them, both to the fancier and farmer, that they will surely become very popular. Their plumage is white, heavily laced with black, the tail alone being solid black; the lacing on the breast is peculiarly handsome. They have a small rose comb, close-fitting; face and ear lobes bright red. Their legs are free from feathers, and are of a rich yellow color. In shape they bear more resemblance to the Dorkings than any other breed. Hens weigh six and one-half pounds, cocks eight and one-half pounds, when full grown. They are very hardy, mature early and are ready to market at any age. Their flesh is very finely flavored and close grained, which, with their yellow skin, model shape, and fine, plump appearance, particularly adapts them for market. They are extraordinary layers, surprising every breeder at the quantity of eggs they produce. If allowed to sit they make the most careful mothers, are content anywhere, and will not attempt to fly over a fence four feet high. Their great beauty and good qualities will make for them a host of friends wherever the breed is introduced. I have a fine lot of breeders selected from a large flock consisting of hens pullets, and large, vigorous cockerels, mated with a design to produce the best results."

A visit to his farm would well repay anyone. In a former issue we described what was seen by a representative of the POULTRY KEEPER, a portion of which would not be out of place here.

The first building visited was the large poultry house in which the small breeds, termed "high-flyers," are kept. In this house were fine specimens of Black Spanish Black-breasted Red Games, Sumatras, Hamburgs, and five varieties of Leghorns. The fowls were all elegant specimens, with their plumage surprisingly perfect and beautiful. Mr. Gammerdinger stated that he did a large business in these breeds, which he cultivated with great care. The house in which these birds are kept was designed by the owner, and deserves special mention in order that poultry fanciers contemplating the building of such structures may profit by Mr. Gammerdinger's skill and experience.

The structure is sixty feet long and sixteen feet wide, made of matched flooring. Twenty feet of it is two stories high, the lower story part being eight feet high at the sides and twelve in the center and has a double (or comb) roof with two ventilators. It is divided in twelve apartments. Each pen has a large window. The pens inside the house are five feet wide and thirteen feet long. This gives each pen three feet of alleyway at the north side of the building. The six yards on each side of the building are ten feet wide and sixty feet long. In every apartment is placed a platform eighteen inches from the floor for catching the droppings, with roosts about eight inches above it. The nests are along the alleyway, opening in the rear, so the eggs can be gathered without entering into the pens. Every nest has its private number, and all eggs taken from these nests are bearing that number, with date of laying, and in the shipping room they are assorted and put in like boxes, bearing same number as in the house. By this manner mistakes are avoided and at same time the age of every egg can be told. In each pen from ten to fifteen birds for breeding purposes are kept. The division fences are solid from the bottom, two and one-half feet high, the balance of the fence being made eight feet high, of strong plaster lath.

All of Mr. G.'s poultry houses have a brick wall foundation, made of fire-brick six to twelve inches above ground. This space is filled inside with ground, coarse gravel, coal tar and finished up with fine sand which forms a solid cement, rat proof, and dry all the year. This floor is usually covered with road dust, or fine sand, every fall, to the depth of four inches, which gives the fowls something to scratch and pick all winter. During the day a little grain is thrown and raked in, which keeps the birds busy and prevents feather and egg eating. The windows are all hung on hinges, and should the weather moderate, are opened, and the house is then like an open shed. Over the windows mesh wire is nailed to prevent the birds flying out, while around the greatest portion of the yards grape vines are planted, which afford excellent shade in summer, and repay a good crop of grapes every fall. Outside of the six large pens on each side of this house is a large yard, kept in grass, into which each yard of fowls is let daily for a few hours. It is apparent that this structure is a very convenient one, and possesses many advantages over the general run of poultry houses. To the right, a little west, is a smaller house, 20x42, in which are kept the Plymouth Rocks; this house contains six apartments, 7x20, each having a window to the south. Here we saw birds of excellent marking, splendid in form, with a good yellow leg and beak, so much sought after. Turning south-east we at once saw, for a distance of 800 feet long, endless yards, with numerous poultry houses, each yard being the size of small city lots, with fruit and shade trees of every description. There were four houses, 10x45 each, nine feet high in front and seven feet in rear, with sheet-roof. The buildings are all made of matched flooring, lined inside with tarred felt, the roofs covered with three-ply heavy tar paper. Each of these houses contains four to five apartments. There are also five to six smaller houses, among them the first one in which Mr. G. began poultry breeding, and which is kept as a relic to remember the early experience in poultry culture. Going through this grand "Poultry Town" we were much surprised with the numerous flocks of extra fine Wyandottes, Light and Dark Brahmas, the lordly Buff, Partridge, White and Black Cochins, Langshans, Black Javas, Crevecœurs and Houdans, the White-crested Black, White, Silver, and Golden Polish. Down to the Golden and Silver Bantams, all by themselves in a roomy, large yard, with all wants supplied, there is presented a sight, and no wonder that men, women and children are often visiting this place, for it is a grand poultry show in itself. At the time of our visit Mr. G. had over 700 breeding fowls in the various yards, and a great number of fine young birds.



BREEDING PEN OF SILVER WYANDOTTES.—FROM CHARLES GAMMERDINGER, COLUMBUS, OHIO.

Next we were taken a piece further south. Here were droves of Cayuga, Rouen and Pekin ducks each in separate large yards, with houses for each drove. Further east we saw two droves of large, fine Bronze Turkeys, while next to them about sixty to seventy-five heavy Toulouse Geese came bobbling at their owner. Through all these yards, which are shaded with various fruit trees, flows a small stream of water, beautifying the grounds and affording a great resort for the ducks and geese. The entire farm, which is located just at the city limits, on South High street, is entirely covered with yards, poultry houses and all the appearance of a first-class poultry farm. The houses are all painted white, and being neat and clean, reminded one of a little village with its thrifty and happy homes. We next were accompanied to the cook and feed room. This is a house 20x50, and right in the center of it we found a large kettle, holding about forty gallons, walled in. Each side of the house has a separate room, in which are stored up wheat, oats, barley, job feed, middlings, small potatoes and cabbage. Mr. G. says "here we cook the breakfast for the birds; at night we put into the kettle about twelve to fifteen gallons of water, six to seven gallons of wheat or barley and ten pounds of meat scraps; when this cooks we add, while cooking, three gallons of job feed (corn meal and oats ground) and two gallons of middlings; this is well stirred, and by morning it presents a stiff mesh, just warm enough for immediate use." When asked as to the precautions taken to preserve the health of his fowls he stated that he used a preparation, manufactured by himself, and known as the "German Egg Food," which prevents and cures the common ailments among poultry, and has no equal in making hens lay. It is compounded upon the most scientific principles, highly tonic, stimulating and alterative. When asked about the mode of hatching, Mr. G. replied, that after several experiments with incubators he decided that the "old hen" was the best incubator yet invented, and the way he managed them he would get a better percentage of thrifty, hearty chicks than by artificial incubators. In early spring the hens are set in the hatching house, and later, as warm weather turns in, are set out doors. Here we just turned north of the cook house, and saw a row of boxes, twenty feet long and two feet wide. These boxes are partitioned off into cells, about two feet square. The boxes are placed in the shade, and in the evening a hen is placed in each apartment, which is closed up, and she is compelled to remain there for two days. At the end of that time the side door is opened at night, in order not to alarm the hen. On the following morning she walks out to feed and water, and almost invariably returns. Should she refuse, however, to enter her apartment, she is again placed there, and shut up for a day and no trouble is experienced.

Mr. Gammerdinger achieves splendid results, from eighty to ninety per cent. of his eggs hatching, and the loss after being hatched is very moderate. Each nest is marked with date of setting and when chicks are hatched, they are marked by punching the web of the foot, so as to keep a record from what pen they are. This will help greatly in mating for next season. The chicks, when hatched, are placed with the hen in a small white coop made for this purpose, and slatted in front so chicks can run out while the old hen is shut up, until chicks are about eight to ten days old. Then both are let out on nice days to pick up part of their food. Each hen is shut up at night, and with her brood, so as to be protected from cats, rats and other enemies. The chicks remain with the hen till six weeks old, when they are housed by themselves, from thirty to forty in one flock. As they grow larger the cockerels are separated from the pullets, and the former well fed, and all that are disqualified by the Standard are killed for market, so as to get room for newcomers. The small birds are fed four to five times each day till three weeks old, and then three times each day. When once separated from the old hen, by this mode of feeding, birds drive wonderful and grow rapidly.

Mr. Gammerdinger breeds over fifty different varieties, including Geese, Ducks, Turkeys, and Guineas. His winnings are wholesale. At the great Inter-state Fair, at St. Louis, the present season, he showed a whole car load, and took prizes in every breed, in a large number of classes making a *clean sweep*, under expert judging. At Kansas City, Crawfordsville, Vincennes Indianapolis, Columbus, Wheeling, and other shows, making *sixteen* shows in all, it was the same old story—walking off with the prizes.

An honest man, reliable breeder, and a desire to please all, has made him a host of friends, and he can boast of the largest establishment of pure breeds in the world, and which is well stocked with prize winners and good birds.

WIGMORE'S INSTRUMENTS.

Owing to the numerous cuts in this issue, and the objections to more on the part of our stern and veteran foreman of the printing office, we have deferred a big display of the various caponizing instruments made by Mr. W. H. Wigmore, 107 South Eighth street, Philadelphia, Pa., until next month. Mr. Wigmore is a surgical instrument maker, and has so improved on caponizing, and the instruments necessary thereto, as to render caponizing no longer very difficult. His broiler knife, shown in this issue, has a double edge, killing the broiler with a thrust without cutting. Send for one of his circulars. Our January, 1887, and March, 1892, illustrates caponizing.

WIGMORE'S BROILER KNIFE. MADE BY W. H. WIGMORE, PHILADELPHIA, PA.

Keeping Eggs.—In a recent issue of your paper, the POULTRY KEEPER, you stated that eggs for hatching will keep for a month if kept in a cool place. Now I keep my eggs in the cellar. What should be the temperature? About how many degrees? I have been taking your valuable paper for four years. I let my subscription run out one year but would not do without it again if I had to pay four times the price you ask for it. If I did, I would have to stop keeping chickens.—*A Subscriber.*—[About forty degrees.—ED.]

THE POULTRY KEEPER.

Subscription Price. 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates. 50 cents per Agate line($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY
PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: - - Hammonton, N. J.

COMMUNICATIONS

To THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

DON'T forget to read the articles on "How to Feed."

THERE were over 1,000 birds at the Sioux City, Iowa, Show.

EVERY issue of the POULTRY KEEPER is a whole *book* on poultry.

ONE sitting of eggs sold pays for an advertisement in this paper.

READ our list of "Books for Five Cents." Each one is worth a dollar.

ANY back number of this paper can be had for five cents in stamps.

OUR issue for this month is very close to 100,000. We can give the *proofs*.

WE have both Rankins and McFettridge's duck books for fifty cents each.

WE take Canadian money from our Canadian friends—even Canadian stamps.

IF you miss a single issue of the POULTRY KEEPER it may be just the one you should have.

ADVERTISE your birds. Be honest with every customer. That is the way to build up a trade.

YOU can get this paper six months, on trial, for twenty-five cents. Each issue is a whole book.

THIS paper has nothing to do with pigeons or *pet* stock. It is a straight-out, *poultry* paper.

SEND us money, money order, postal notes, or checks if you can, but if inconvenient send *postage stamps*.

THE man who attempts to make poultry pay without the use of pure breeds will lose half the battle in the beginning.

DESPITE the hard times we are doing thirty per cent. more subscription business than for the corresponding period of last year.

STRANGE that every time one of the World's Fair men try to bolster up the poultry *fake*, in the cattle sheds, they make matters worse.

DON'T ventilate your houses. Try a little of the so-called foul air, (if you can find any in winter), and you will have fewer dead fowls.

GET in a little two-line or three-line advertisement in March. It will surprise you. If you sell only one sitting of eggs you will get your money back.

THE American Wyandotte Club will meet at three o'clock, p. m., at the New York Show, Madison Square Garden, on Monday, February 12th.

THE great Poultry Show at Madison Square Garden, New York City, will occur February 8th to 13th. Mr. H. V. Crawford, Montclair, N. J., is Secretary.

THE Poultry Show of the Rhode Island Poultry Association was a grand success. But then they have Mr. Samuel Cushman with them, and he is a go-ahead man.

Fifty World's Fair views, the Farm and Fireside (semi-monthly), and the Poultry Keeper—all for fifty cents—the papers one year.

GET an incubator. The first batch will nearly pay the cost if you are successful with the hatch and raise the chicks. Of course, something is to be learned, but you can do it as well as others.

YOU can get this paper for a year at fifty cents. For one dollar we send the *Southern Fancier*, *Fancier's Review*, and POULTRY KEEPER. Cheap as dirt—three papers for a dollar.

TWELVE men out of the twenty-seven new members at Chicago have *failed* to pay, *and time is up*. Is any other evidence necessary to endorse our opinion of how matters were arranged. We think not.

THE reputable papers who did not sell their World's Fair reports for a dishwater advertisement (and throw in a cut) will come out all right in the end. Visitors are not all fools, and can see for themselves.

IF the "Standard" was sold by making a pamphlet "Standard" for each breed, and selling it for ten cents, it would pay the Association and educate the buyers, as breeders would buy them and send to their customers.

WE delight in answering questions for our readers. No question is *foolish* with us. We understand that readers wish to learn, and are compelled to ask many questions that may appear unnecessary. The POULTRY KEEPER is everybody's paper.

AN adjourned meeting of the New Jersey Poultry Association will be held at Madison Square Garden, during the poultry show at New York City, on Monday, February 12th, at 11:00 a. m. Mr. C. W. Johnson, Cranford, N. J., is secretary.

IF you keep poultry and dogs both, you can get all there is in it in the line of publications by taking the POULTRY KEEPER and *The Dog Fancier*. Both are sent to one address for seventy-five cents a year.

WE expect to display all the various capouizing instruments in our next issue, with the newest improvements, as we have secured the valuable cuts of Mr. W. H. Wigmore, 107 South Eighth street, Philadelphia.

WE are receiving lots of advertisements, and *more* coming. It is in February, March and April that the two-line, three-line and other advertisements come in. One line in the POULTRY KEEPER is as good as an inch in some journals.

THE new *Standard of Perfection* ought to be out *now*. One was appointed to *edit* it (an unnecessary proceeding), which will delay it until the editor has time enough to make a show of earning his money. Only a few new breeds were admitted, and we could do the whole thing in about *two days*. But *when* it *will* be out we cannot state.

IF you will send us the names of any persons interested in poultry, with two stamps for postage and stationery, we will send you plans (illustrated) with directions for a hot-water home-made incubator. For the plans address our editor, P. H. Jacobs Hammonton, N. J.

WE want an explanation of how a New York man's *strain* won at Chicago, and how it is that he still *has* the strain. Also, why the New York man was so busy and anxious at Chicago in regard to the awards. Did he sell his birds and buy them again, or did the Indiana man borrow them.

MR. M. K. BOYER (Uncle Mike) is no longer associate editor of the POULTRY KEEPER, having resigned to take charge of something else. He was not *requested* to resign (or *fired out*) as has been the case with a few others. We regret his loss to our paper.

MR. JAMES E. WARNER has severed his connection with the *Poultry Bulletin*, and has commenced the publication of the *Live Stock Monthly*, at No. 19 Park Place, New York City. The subscription is fifty cents per year, or eighty cents for it with the POULTRY KEEPER. Mr. John Glasgow will have charge of the pigeon department. Mr. Warner is a very popular editor, and knows how to get out a good paper.

AN enemy has stated that Mr. Boyer has no broiler house. The statement is a deliberate falsehood, made by one who before has referred to him and his experiments favorably. Mr. Boyer is one of the most persistent experimenters in this country, never leaves his home, and has more live stock on a small farm than any man we know.

THAT the *voters* at the American *poultry* Association were of a class to serve as ward heelers is shown by the fact that the time is up for paying their fees but the *cash* is lacking for some of them. Honest men joined, but some got in *free* to vote, and did just what was expected of them. We will endeavor to secure their names and expose them, as we have a list of those who were admitted. If their names are not in the list of members when the proceedings are out they will be published.

JUST READ THIS!

Fifty views of the World's Fair, the Poultry Keeper one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for fifty cents to new subscribers. See adv.

THE "FANCIERS' JOURNAL"

Was sold at assignees' sale on January 16, and will be resumed with the September number as a monthly, and the name changed to *The Farmers' and Fanciers' Journal*. All subscribers will receive all that is due them, as we can fully vouch for the responsibility of the new firm. The price will be fifty cents per annum, or it and THE POULTRY KEEPER both for sixty cents. We guarantee that subscriptions received now will commence with September number and be sent to the end of 1895—sixteen months—for the price of twelve. Address all communications to Farmers' and Fanciers' Co., Cochranville, Pa.

YOUR MISTAKE.

When one begins to build a poultry house he will travel a mile to find out how to ventilate. Now, we can assure you that if you endeavored to keep the fresh air out you cannot do it in winter. Keep your birds warm. Nail up the barbarous, murderous ventilators.

SEND US YOUR EXPERIENCE.

We publish more letters in a year than some journals have of circulation. All are invited to assist. Send us your experience It will help *somebody*. We respect every man's effort. If his spelling is not good we endeavor to correct it. Be brief if you can, but tell us what you have done.

POULTRY FOR PROFIT.

This book is No. 1 of our series, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the POULTRY KEEPER, and send sixty cents, we will send the book, and also the paper for one year.

BOUND VOLUMES.

We have bound volumes of the POULTRY KEEPER from its start, April 1884, which makes a valuable library for poultrymen. Price, $1.00, postpaid for any one year. 1885–86–87–88 are bound in one volume. Price, $2.50, by express at buyer's expense, or $2.90 by mail postpaid. They are all substantially bound in cloth with gilt stamp on front.

BUFF COCHIN CLUB.

The Seventh Annual Meeting of the American Buff Cochin Club will be held at Madison Square Garden, New York, February 10th, at one o'clock p. m. It is expected that at this meeting the name of the Club will be changed to the American Cochin Club. Mr. Geo. E. Peer is Secretary.

DON'T YOU MISS IT.

If you wish to make poultry pay you should take this paper. It does not give a little of *everything*, but is confined to *poultry*. The editor does not know it all, but the readers send him sometimes as many as fifty articles a month, and from their experience. We do not attempt to please *fanciers* in our articles, but satisfy the *readers*. The paper is independent, and no unreliable advertiser can get in if we know it.

MAKE IT PAY.

You can make poultry pay, and we propose to help you do it. You should get our back numbers. We suggest this because we have illustrated over 1000 houses, brooders, appliances, etc., and it is cheaper for you to send five cents for a back number than for us to print all those things again. Our editor never considers it a hardship to help readers by mail if cases are urgent. Write to him personlly, and don't forget the postage.

THE EDITOR'S LITTLE SAY.

If any reader has a case that is urgent the editor will always gladly reply. Write to him direct, at Hammonton, New Jersey, (his residence), and don't forget postage. Two stamps should be sent, to pay for postage and stationery, or a stamped envelope. If the reply is short a postal card will answer. He will reply to any inquiry. Do not send subscriptions, etc., to him, as he has to forward such to the POULTRY KEEPER. The paper is published at Parkesburg, (not Parkersburg) Pa., and the editor lives 100 miles away. Send all inquiries, communications, etc., to the editor though they will reach him even if sent to the paper.

ALL ABOUT BROILERS.

This book was written by Mr. M. K. Boyer mainly to instruct the novice. Read the contents: Is Broiler Raising a Failure? How Much Capital is Required? How Much Land and How Much Time is Necessary? What are the Profits? Incubators, and How to Run Them. Brooders, and How to Manage Them. Feed, and How to Give it. Mistakes in Broiler Raising. Pure-breds for Broilers. Good Crosses for Broilers. How Broilers are Prepared for Market. An Egg Farm. How to Build Houses. How to Feed Laying Hens. How to get Fertile Eggs; How to Market; How to Fatten. Caponizing. Pure-breds the Best. Money in Ducks. How Large a Farm? Diseases and Remedies. Size of Breeding Pen. A Virginian's Egg Secret. French Lice Remedy. "Sauer Kraut" for Fowls. E. C. Howe's Broiler Food. Peterson's Feed for Laying Hens. Peterson's Feed for young Chicks. Poultry at the Experiment Stations. Price, twenty-five cents per copy.

PROFITABLE POULTRY FARMING.

This work by Mr. M. K. Boyer, should be in the hands of all interested in making poultry pay. It treats of the growth of practical poultry farming; the requirements; the best way to begin; the value of crosses; the use of the thoroughbred; how to have hardy and prosperous stock; the success of artificial incubation; running an incubator and brooder on the farm; building an incubator cellar; colonizing the chicks; R. G. White's methods of feeding chicks; poultry as an adjunct; a butter and egg farm; size of hen yards for success; building hen houses for comfort as well as profit; feeding for eggs; Mr. Hunter's methods of egg farming; how to test eggs; poultry and fruit; broilers and berries; how the scheme works in Hammonton; specialties in vegetables; a general poultry farm; the Atlantic Duck Farm; duck culture for profit; size of houses; how the breeding ducks are fed; how the ducklings are fed; how to dress ducklings for market; and other useful points. Price, twenty-five cents per copy.

THE POULTRY KEEPER SPECIALS.

No. 1 treats mostly on diseases. In order however to make it more valuable, we have included many other subjects. We will state that we have simply gone back to the old numbers of the POULTRY KEEPER and put "the best of them together," using the plates of special numbers of the POULTRY KEEPER, hence the name of *Poultry Keeper Special*. It contains thirty-two pages the size of the POULTRY KEEPER, price twenty-five cents, but for sixty cents we send it and also the POULTRY KEEPER one year. *Poultry Keeper Special* for 1893 is similar to book No. 1, only the contents are entirely different and equally valuable. The terms for it are the same as for No. 4.

WE HAVE BOUGHT THE FANCIER'S JOURNAL.

The POULTRY KEEPER CO., acting for another party, has purchased the *Fanciers' Journal*, and considerable change will be made, as will be seen by a note elsewhere in our columns. We also purchased the large number of cuts, its fonts of job type, and its numerous cases and type for reading. Also its good will and subscription books, advertising patronage, and nearly the whole outfit. We now have an opportunity to nail some deliberate and contemptible falsehoods that have appeared in its columns, as all the *facts* are now in our possession. So far as the gentlemen from whom we purchased the paper are concerned they are blameless; for many of the causes which led to the assignment of the paper are due to one who not only made untrue statements, but who was deliberately *fired out* under the usual process known as "requesting his resignation." The One Man had a good time on a high salary, and perhaps better than he will ever have again. But the *Fancier's Journal* will *live*, and will *pay*, long after the O. M. has ceased traveling from town to town looking for new jobs. There is plenty of capital behind the paper, and no salaries will be paid for viewing base-ball matches. Already some of the leading breeders of dogs have expressed their gratification that the paper is in our hands, for we will build the circulation up, and make it pay the advertisers.

SOMETHING ABOUT SOFT EGGS.

Mr. F M. Sands, Muncy Valley, Pa, has an experience with his hens which many others have met. His hens lay when on the roost. We give below what he says for the information of our readers.

After giving you full particulars, I wish to know what is the cause of my hens laying eggs on the roosts. I loose eggs every day by the hens laying them while on the roosts, and the majority have soft, thin shells. Just under the roost poles I have a tight floor, but the shells are so soft they break and run out. My chickens are Plymouth Rocks. I give them, in the morning, a hot feed of shorts and then scatter a little mixture of oats and buckwheat in straw to keep them busy until the afternoon, when give them oats, buckwheat, and *once in a while* a little corn, which constitutes the evening meal. I give fresh water every day and also pound up all the bones and lean meat I get, and keep lime and coal ashes by them, and they are kept warm all the time.

The cause is due to the hens being too fat. It will be noticed that he keeps *lime* by them all the time, and we believe his section of country is limestone, yet the shells of the eggs are soft. Besides, the *bone* he feeds is phosphate of lime. His hens do not lack for shell material at all. He should feed nothing in the morning for about two weeks, or even nothing at all for a week, so as to reduce them in condition. Being fat they will not starve.

THE CHICAGO SHOW.

Our new readers should send for our December and January issues to read our report of the Chicago show. We simply reported what we saw, and mentioned no man's name disparagingly. The affair was a *fake* of the first water, but there were men who endeavored to *work* the thing all to themselves, but did not care to have us give the facts. Those editors who did not get *jobs*, and who were not interested for their *own* sake, mentioned the show as they saw it. At night a certain lot of men got together to get a resolution in the American Poultry Association proceedings to injure us, we being absent and knowing nothing of their intention, as we had met them at Charleston, where they could have done the same thing two years ago, the difference being that we *were at the Charleston meeting*. We are waiting for the proceedings of the Chicago meeting, as we do not even know what these men said. But every man who took a part in making expressions at that meeting will have to act honorably or have his record shown. We still maintain that the show at Chicago was a *fake* and unworthy the name of a poultry show.

YOU can usually judge of a paper by the value it puts upon *itself*. When you are offered a yearly advertisement at about twenty-five cents per inch each week the *business* you will get will be about correspondingly as great, or *less*. Papers are not like mushrooms—grow up in a night.

MENTIONINGS.

Mr. A. E. Holman, Hammonton, N. J., keeps nothing but Brown Leghorns, and aims to make them equal to any. He also has a broiler establishment in operation.

Eggs for incubators are offered by Mr. J. F. Clarke, Marietta, Ga

Mr. M. F. Peck, 334 Washington St, New York City, Commission Merchant, makes a specialty of selling broilers.

Now take a little time and read *every one* of the small and large advertisements in this issue. Every one is a nutshell of information. Hang this up for reference.

Don't forget to write us if you win prizes. We want to know, you know. If you did not go to the show let us know about your stock, etc. This applies to advertisers only.

Be sure and get to the New York show and see the sights.

The Fitch Fertilizer Works, Bay City, Mich., put on the market bone and shell for poultry. It is a separate industry from their fertilizer business.

Somebody asked us for Hampshiredown sheep. Well, a Hampshire ram will weigh about 325 pounds when fully grown, and fortunately they are advertised in our paper by Mr. A. Elwyn Strode, West Chester, Pa.

Spongia, for roup, can be obtained from Boericke & Tafel, 1011 Arch street, Philadelphia.

Mr. Geo. E. Chalfant, Hammonton, N. J., makes a specialty of Houdans. He has stock direct from France. He has also White and Barred Plymouth Rocks, and a broiler establishment.

Mr. George J. Nissly, Saline, Mich., has probably the largest poultry establishment in that section. He keeps a full stock of poultry supplies.

The cold storage houses are lined with a non-conducting paper. Mr. R. Esau, box 22, West Hoboken, N. J., can give particulars. We mention this as we have had no experience with cold storage houses, and Mr. Esau has kindly offered to help our readers.

Messrs. Peter Duryee & Co., 215 Greenwich St., New York City, by offering the best poultry fence (made of galvanized wire netting) at only *half a cent* per square foot, takes the lead on every other style of fence for fowls, if we judge by *price* and *quality*. Read their advertisement. The house is one of the oldest and most reliable in New York.

Mr. A. F. Swan, 38 Dey street, New York City, has been an advertiser with us since 1884, and we have never had a single complaint against him. Swan's standard roofing is used all over the United States.

Dr. C. A. Wiant, Marion, Ohio, has purchased the Buff Leghorn cock "Joker," from Mrs. W. P. Wheeler, which that lady bought from Mrs. Kay, of England. He won first at Birmingham, Eng., and also first at the Leghorn Club Show, England, and at the Columbian Exposition. Dr. Wiant has associated with him Mr. Beringer, and they have just *swept the decks* at Dayton, Ohio.

Mr. Judd J. Fuller, Sioux City, Iowa, got the firsts on Pit Games at the recent Sioux City Show.

Mr. A. F. Williams, Bristol, Ct., informs us that we omitted that he was awarded two medals and two diplomas at the World's Fair Show on his Monitor Incubator.

Mr. Wm. West, Pecksburg, Indiana, won first on his Plymouth Rock pullet, and also on his Brown Leghorn pullet at Danville, Indiana. He also bought the second prize Brown Leghorn cockerel.

What a glorious time the fraud prize winners would have *if* the POULTRY KEEPER would only "bust." But it *won't*.

Several excellent communications and cuts are crowded out of this issue. They will appear next month.

If you miss a single copy of this paper let us know. It may be Uncle Sam's fault. Don't get mad but write us. We are anxious for you to get every copy. You see, we want to hold on to you.

Mr. M. F. Steelwagen, St. Ignace, Mich., weighed a Minorca hen which tipped the scales at eight pounds. She was not overfat.

Mr. C. A. Bartlett, Worcester, Mass., who makes the celebrated O. K. Food (animal meal) sent us fifty pounds, and not only did the hens rush for it, but some St. Bernard dogs found it excellent also.

All of the members of the New Jersey Poultry Association should be present at the meeting to be held at Madison Square Garden, New York City, Feb. 12th, at eleven o'clock a. m.

Mr P. A. Webster, Cazenovia, N. Y., sent us a sample of limestone grit, for broilers, which should be just the thing for them.

The old fraud, J. M. Bain, who has worked around New Concord and Zanesville, Ohio, is caught at last. He has invented more gullible schemes to get money from unsuspected persons than any other man in this country, extending back for fifteen years. He must now pay $500 fine, and serve eighteen months hard labor in the penitentiary.

Mr. M. F. Steelwagen, St. Ignace, Mich. has purchased the right of Dr. Owsley's roup cure, and will hereafter put it on the market extensively.

Messrs. Johnson & Stokes, Seedsmen, 217 Market street, Philadelphia, sent us their catalogue, which not only contains all the different seeds and novelties, but illustrations of poultry, chick foods, thermometers and all the various appliances required by poultrymen.

Mr. W. W. Kulp, Pottstown, Pa., is an old winner. He has recently bought "Cyrus," the Rosecomb Brown Leghorn cock, and winner at the last Madison Garden Show, of Mr. E. E. Homan, Yaplank, New York, as well as "Daisy" of first, and many other prize winners. Mr. Kulp says they are the finest Rose comb Brown Leghorns in the world. Mr. Kulp has also won at Reading and other places on his Leghorns and Plymouth Rocks.

Mrs. W. P. Wheeler, wife of Mr. W. P. Wheeler, of the New York Agricultural Experiment Station, Geneva, New York, who won the honors for Buff Leghorns at the World's Fair, offered a special prize of $10 for the best breeding pen of Buff Leghorns at the Rochester show.

We still maintain that the first prize *hen* at Chicago was a *pullet*. The judge ought to have known it.

TO ALL INTERESTED.

No man can advertise in this paper unless we have reason to believe him honorable. If he proves unreliable, out he goes. We want neither him or his money.

All who advertise with us are requested to send us a brief report of their winnings on or *before* February 15th. We do not publish the list of awards at shows, as we may not know the parties, and prefer to mention our advertisers only.

Every advertiser, even if he has but a few lines, is requested to give us a brief account of his stock, his winnings, etc., which will be mentioned, *free of charge*. We have not the space to devote to non-advertisers, and our readers are not interested in them, knowing that we endeavor to guard our columns, as far as we can, against unreliable persons.

JUST READ THIS!

Fifty views of the World's Fair, the Poultry Keeper one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and fifty views, all for fifty cents to new subscribers. See adv.

A FREE GIFT

To Our Subscribers:

50 Photographic Views OF THE World's Fair.

$25 Worth of Intantaneous Photographic Views.

The achievements in Mechanics, in Architecture, in Art and in Science of that great event, with all its marvelous Exhibits, Scenes and Surroundings, which produced the sublime spectacle, has passed away, but, thanks to photography, it yet lives for the entertainment and edification of the multitudes and for posterity in a realistic and

Magnificent Panorama OF THE World's Fair,

Showing pictures of grand Buildings, of glittering Domes, of massive Arches, of noble Statuary, of jetting Fountains, of beautiful Interior Exhibits, of Venetian Gondolas, gliding over the deep Lagoons, of Pavilions, of Foreign Villages, of Cafes, of the Wooded Island, and many other attractions of the Dream City and

THE FAMOUS MIDWAY PLAISANCE, THE BAZAAR OF NATIONS, OR THE SIDE-SHOW OF THE WORLD'S FAIR.

The Greatest Achievement of the Age

On the shore of Lake Michigan, from May 1st to October 30th, 1893, stood the Magic City—the Dream City—that caused the whole world to halt and gaze in wonder and amazement. This was the crowning event in America's history of 400 years. Every nation, from "Greenland's Icy Mountains to India's Coral Strand," from darkest Africa to the islands of the sea, poured forth their riches as tribute to the World's Columbian Exposition, that it should be the most marvelous display of ancient and modern times. All that the brain of man and woman had conceived, that human skill could execute, was there. Among these was the largest building in the world, largest engine in the world, most powerful electrical machinery in the world, fastest train in the world, greatest cannon in the world, strongest searchlight in the world, highest wheel in the world, most extensive collection of paintings in the world, and a thousand and one other greatest things were there within an area of 633 acres, of which 250 acres were covered with buildings that alone cost Twenty three Million Dollars. All this wealth of the earth and genius of mind was concentrated there to exemplify the imperial glories of our nation. Only the spirit and the pictures of this, the eighth and greatest wonder of the world, remain with us. The spirit will make our nation greater and all humanity better, while the pictures wake a pictorial history that will tell the story to all the children of men.

THOSE WHO WENT TO THE FAIR will live again, in these pictures and accompanying descriptions, the delights they experienced on that memorable trip to the Fair. They are sure to exclaim, "Why, it seems as though I am right there!"

THOSE WHO DID NOT GO will find in them a source of great delight and education. With such pictures and descriptions they can yet visit the Fair in all its glory. Parents should secure this beautiful pictorial history for their children.

A Partial List of the Views.

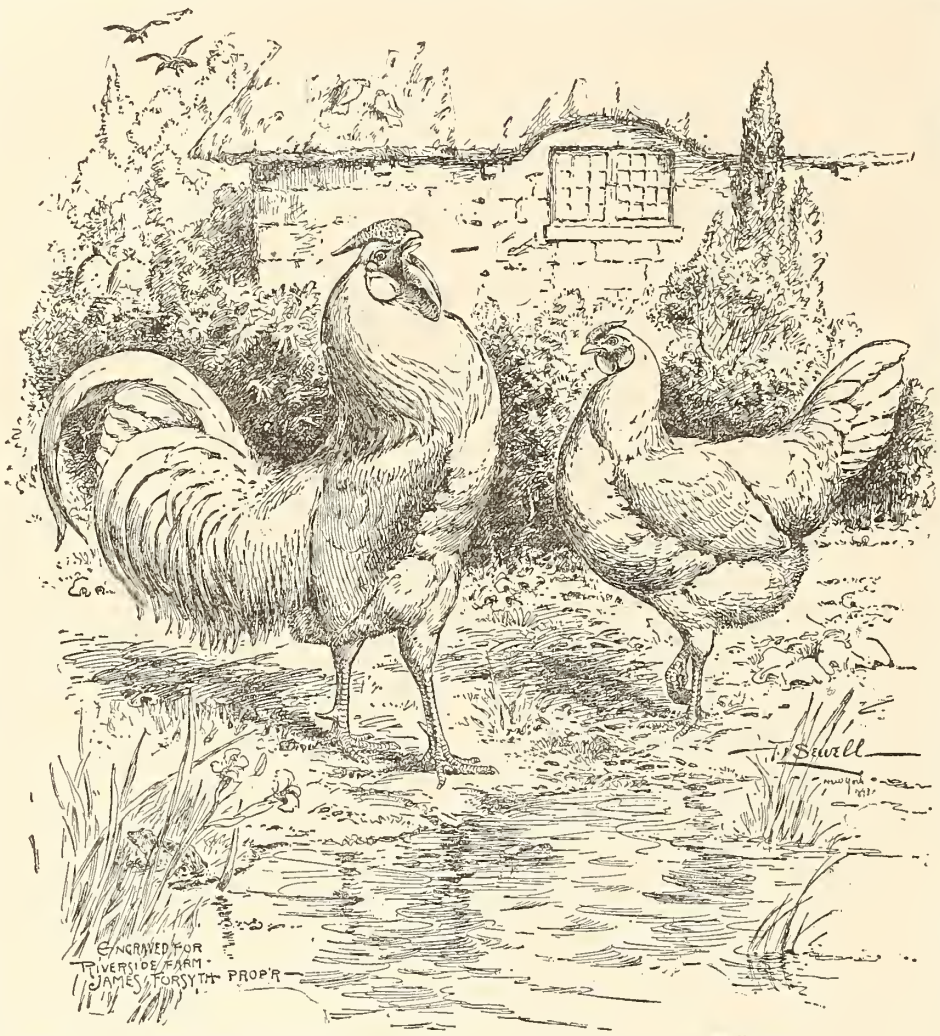
Court of Honor. This is considered the most majestic scene that has ever been wrought by the hands of men.
Columbus' Caravals. Exact reproductions of the Santa Maria, Nina and Pinta ships, in which Columbus sailed in his discovery of America.
The Ferris Wheel. The highest wheel in the world, and one of the mechanical wonders of this age.
Battle Ship Illinois. An exact reproduction of one of America's finest war vessels, fully equipped.
California State Building. Cost $75,000, and next to the largest State building.
John Bull Locomotive. The oldest successful railroad locomotive in America.
Manufacturers' Building. The largest building in the world, which cost $1,700,000 and had nearly 44 acres of floor space.
Administration Building. Cost $550,000, and considered the architectural gem of the Fair.
Woman's Building. Cost $38,000, and was devoted exclusively to woman's work.
Statue of the Republic. By French. The statue is 65 feet tall, and required nearly $4,000 worth of gold leaf to cover it.
Irish Village. Reproduction of a typical village in Ireland, and one of the greatest attractions on the Midway.
Cliff Dwellers. A reproduction of the homes of that curious race of Indians.
Palace Mechanical Arts. Cost $1,200,000; was 850 feet long and 500 feet broad
Ostrich Farm. An exhibit of live ostriches.
Interior Manufacturers' Building.
Interior Government Building.
Number of State Buildings, Etc.

READ OUR WONDERFUL OFFER.

We will give the 50 Photographic Views described above, also the *Farm and Fireside* one year, and THE POULTRY KEEPER one year, all three for fifty cents to new subscribers only. Persons already having subscribed for THE POULTRY KEEPER will have to send a new subscriber and have the Premiums sent to themselves, as the three will only be sent for this price when ordered all at the same time. Subscriptions of this kind will not count on any other premium. This is a *hard times* offer. Don't neglect it. *Farm and Fireside* will come twice a month. Address POULTRY KEEPER CO., Parkesburg, Pa.

MR. FORSYTH'S ROSE-COMB WHITE LEGHORNS.

We present an illustration, by the artist Sewell, of the first prize winners of Rose-comb White Leghorns at the great Madison Square Garden Show, at New York City, in 1893. Mr. James Forsyth, the proprietor of "Riverside Farm," Owego, Tioga county, New York, is known far and wide for his success in the show room. He won the gold medal on his Single-comb Brown Leghorns at the American Institute Building, New York City, in 1890, and also won Rose-comb Brown Leghorns at Madison Square Garden, in 1893, taking first and gold special. His special breeds are Rosecomb Brown Leghorns, Rosecomb White Leghorns, Houdans, White Wyandottes, Buff Wyandottes, and Buff Plymouth Rocks. He raises nearly 2000 birds each year, and his stock often reaches $10,000 in value He has a cold-storage capacity for 25,000 eggs, a business which he conducts outside of the "fancy." His reputation for fair dealing, purity of stock, and a desire to please his customers cannot be impeached. He has been a leading breeder for many years, and is well known in all sections of the country.



ROSE-COMB WHITE LEGHORNS.—FROM JAMES FORSYTH, "RIVERSIDE FARM," OWEGO, N. YORK. FIRST PRIZE WINNERS AT NEW YORK SHOW, 1893.

THE HEN AND THE COW.

Why should a hen have more room, in proportion to size, than a cow? On this point Mr. F. A. Brown, of Hickory, Maryland, writes a most excellent letter. As Mr. Brown also brings out several other valuable suggestions we hope every reader will peruse his article, which we give below. Mr. Brown says:

There is one thing connected with the poultry business that I have never seen explained and that I can't understand. It is why a hen requires so much more room in proportion to her size than farm animals. You say give twenty-five hens a house 12x12 feet. We keep four cows in that space. About 3x12 feet, including feed alley, is the space allowed in the dairy barns per cow, or about twenty-two pounds of cow per square foot. Six hens in the same space would be less than one and one-half pounds per square foot. Now, why does a hen require sixteen times the room a cow does? There certainly cannot be that much difference in the lung capacity of the two. While I do not wish to question the judgment of a veteran it does seem to me that hens do not need that amount of room for sleeping quarters *in this climate* (I am ten miles south of the Pennsylvania line). Last winter I kept thirty-five hens in a room 6x14 feet, in the back corner of a bank barn, with no allowance for ventilation except the cracks between the boards on one side, and they did better than twenty had ever did in a tight house above ground 14x20 feet. The most profit I ever got from hens was one season that I kept fifteen in a house 4x6 feet, but one and one-half square feet per *hen*, and the hens kept perfectly healthy.

My hens have free range, a rocky thicket about fifty yards from the barn being their favorite scratching grounds. I have not fed them since last spring, and they only get what they scratch for, yet they are too fat to lay. The snow, however, will cut off much of their food supply and probably set them to laying. I had much the same experience last year, but when eggs were from twenty-five to thirty-six cents per dozen, the hens were attending to business, so I don't mind their idleness during warm weather.

One hen that was laying soft shelled eggs I shut up for four days without feed, and then she layed a hard shelled egg—another proof that she did not need lime. For the last two years I have not had a case of gapes, and the year before I only lost two, and I attribute it to the fact that I use no soft feed for young chicks. I feed on wheat from the start, alternating with popcorn and kaffir corn, and as soon as they can swallow a grain of corn they get that mostly. I do not write this for publication, but only to call your attention to a point I have never seen mentioned in any poultry articles, and your forbearance with others is my apology for troubling you.

Mr. Brown does not make a distinction between the *space on the roost* and the space on the floor. When a hen is on the roost at night the *real space* which she occupies is that on the roost, the balance of the room not being occupied just at that time. The cow occupies the *stall*, but has all the air in the barn. The poultry house *could* be lower, but as a rule poultry houses are built so as to permit of access to the interior, which necessitates some provision for the *man* as well as for the hen. When barns or stables are built the size required for the cow is suitable for the man also.

Then again, the cow can walk in deep snow, which is a difficult matter for the hen, hence while the cow can use the barnyard during the day the hen can only use the space on the floor. At night the roost, which may take up only a space of 1x10 feet, or ten square feet, will accommodate about a dozen hens, making eight pounds per square foot, and only *the same* for a *cubic* foot, while a cow (allowing four feet for height), requires a *cubic* foot for every four pounds of cow. Of course, the cubic space in the poultry house, or in the cattle stable, is not considered in the figures here given.

There is no reason why the roosting house should not be less of cubic space. We do not believe in the *foul air* theory, as we have never yet known of a loss to occur in winter from lack of air, but hundreds of hens die from ventilation, large poultry houses, and insufficient warmth

Mr. Brown's method of feeding has given him good results, yet we believe that even better results can be secured with less corn and more lean meat. His experiment with the hen that layed soft shell eggs confirms all that we have stated in regard to lime for the shells, etc., and it also indicated that he was feeding too much carbonaceous food.

Our thanks are extended him for his excellent letter, which contains some valuable hints for our readers, and we endorse his views on keeping the hens in good laying condition.

ARRANGEMENTS FOR POULTRY.

While the animals on a farm have suitable arrangements in buildings and pastures and are carefully looked after until the stable and barn doors are fastened for the night, the poultry are in many cases expected to find their own quarters and perform for themselves a part of the necessary work required in their management. To be compelled to hunt for nests, or have the hens laying in the stable troughs, is an indication that something is lacking on the part of the farmer in the interest he takes in his feathered stock, and also that he has not provided all the conveniences for the hens to which they are entitled as producers on the farm of a salable article.

All kinds of poultry fill a place, each according to its purpose, on the farm, and true economy is that which enables the poultry to give the best results. When hens are kept for the purpose of laying a large number of eggs, and fail to perform what is expected of them, there is a liability that some mistake has been made in their management, and that they are not kept under those conditions which assist them in complying with the desires of their owner. If they are cast aside to serve themselves, and are allowed to go beyond their bounds, they are then obstacles and nuisances instead of being beneficial. When a flock is kept for profit it should be properly supplied with all that it demands, if it is possible to do so. The arrangements of the grounds and quarters are to be considered first, not only because the fowls will receive a benefit, but because by so doing the work will be done more systematically and carefully.

There is no department on the farm that does not deserve careful supervision by the farmer, with every effort made to arrange for the best results; but when any one branch is to be slighted it is the poultry. Yet on every farm the largest profit, in proportion to capital and labor bestowed, is made from poultry, a careful keeping of accounts demonstrating such fact in every case. Profits have been derived on some farms that were undeserving, the hens receiving no consideration compared with the care bestowed on other stock.

BUYING AND SELLING.

There is a class interested in poultry that buys from farmers, and after dressing the poultry the carcasses are shipped to market. It is a very profitable business, and such dealers are useful in a community as they are always ready to accept any of the surplus stock offered and save time and labor for the farmers, as they dress and ship hundreds of carcasses at once, while some farmers, in order to secure a few cents more per pound, do not take into consideration the labor they bestow in preparing but a few fowls for shipment.

A greater profit can be made in buying poultry, however, if those engaged in such business will fatten the fowls before killing. Instead of buying to-day and selling to-morrow, there should be clean quarters, with small yards attacked, with feed and water troughs, and the birds fed on fattening foods, so as to increase the weight and secure a larger price per pound. In ten days or two weeks the birds will be ready for market if they are given all the food they will eat during that time.

By being patient and allowing time for increasing the weight, it becomes an advantage to buy poor birds if they are in good health, as the first cost is less and a greater proportionate weight can be added. Only the frame or bony structure is required. The food will then increase the weight and the quality will be superior, as birds that are fattened in a short period of time are tender and juicy. Such a plan would rid the market of much of the inferior poultry that is usually forwarded, and as the cost of producing one pound of poultry should not exceed five cents, the adoption of the method would furnish the markets with better stock and largely add to the profits of the business.

THE VERY BEST BREED.

It is impossible to get all the good qualities in one breed. A breed may be excellent for laying yet lack hardiness, or it may be hardy and prove deficient in some other respect. On this subject one of our subscribers in Canada writes us as follows:

Give me the name of the breed that would suit me best. I want a breed that will weigh the most at two to three and a half months old, and which will lay a fair amount of eggs in fall, winter and spring. We also pick our fowls for market, and would like a white breed. My opinion is that the White Wyandotts will suit me. Above all I want hardiness. The fowls may have free range.

In the above the reader wants rapid growth, hardiness, good laying qualities, and *white* plumage. His selection of the White Wyandotte is an excellent one, but it will not make the *most* growth up to three months. For that climate, and to answer the inquiry, we would select the Light Brahma, yet the Brahma will not lay as many eggs as some breeds, but it grows rapidly, is hardy, and is nearly white in plumage.

A bird that is best for Canada, however, may be out of place in some other section. The climate is a difficulty in the way which cannot be overlooked. The best breed for one section is not the best for another. On a free range, with moderate climate, the Leghorn cannot be excelled for laying, but it is out of place in a small yard, as it is an active forager, and prefersto be busy, while the Brahma is contented anywhere and can easily be confined with a low fence.

EGGS BY PARCELS POST.

The improvement of the poultry in this country would be rapidly advanced but for the high express rates charged for sending eggs to customers by breeders. It would not, perhaps, be advisable to send eggs by parcels post to be sold in market, but it is possible to send eggs for hatching purposes, not exceeding fifteen in number, and from pure-bred fowls, in suitable boxes. It is done in England, and if it can be practiced here, all objections are removed so far as the feasibility of the matter is concerned, as we can as easily use the same system in this country. It does not save anything to the breeder if transportation is lowered, as the buyer now pays the expressage, but it will bring him more orders, as it will cheapen the cost very materially to the purchaser, encouraging him to procure the best, and a larger number of farmers will be induced to use pure-bred stock and thus improve their flocks, while the breeder will only have to stamp his box and deliver it at the post office. Parcels post is really by *mail*, but of course a package of eggs could not be sent in the letter bags, but some arrangement could be made by which the Government could forward them.

BOSTON VS. HAMMONTON.

HON. EDWARD ATKINSON HAS AN INNING—THE PUBLIC'S THE UMPIRE.

To the Editor of the Southern Fancier:

Some one has kindly sent me a copy of the POULTRY KEEPER containing an article about an alleged controversy between Dr. George D. Johnson in the *Southern Fancier* and myself, the subject of the so-called controversy being "saccharate of lime." Dr. Johnson is said to do a lot of "squibbling." I don't know what that word means, and there is something else that I do not understand. I have often heard of the hen fever; I never had it myself, but perhaps I have caught a little of it. I find in my mind a tendency to use very curious words and very long ones. To my comprehension the editor of the POULTRY KEEPER is exacerbated to a degree which reminds one of an impetiginous scroyle who not only resembles O'Connell when he shut up the fish woman by calling her a parallelopipedon, but he often seems to be inclined to excoriate the epidermis of innocent people. What would the editor have said if I had stated as I might have—that the hen food would be more suitable if it had some *Trimethylethyammoneumiodide* put into it? Would that be a symptom of hen fever? The editor is doubtless in his domestic capacity as sweet and mild as a spring flower, but there is an excellent conundrum about a spring flower of which I am reminded. Why does a little Bantam cockerel resemble an early spring flower? Because he is a little cro (w) cus (s).

He seems to object to two sets of letters which you put after my name. One of those sets of letters was LL. D., the other is Ph. D. He remarks in a parenthesis "whatever that means" I am glad to be able to tell him that LL. D. means Doctor of Laws. I confess I was very much surprised when the State University of South Carolina conferred their degree on an old-time abolitionist like myself, but I am very proud of it. The other set of letters, Ph. D. I would inform him means Doctor of Philosophy. The word philosophy is derived from two Greek words which mean the love of wisdom. Why the editor asks what those letters mean in connection with the subject of feeding hens with molasses and oyster shells I confess I am at a loss to know.

The fault which has brought down upon me such a fearful set of imprecations, or swear words in disguise, is that I thought it might be a good plan to make hen food out of corn chaff and skimmed milk. One of my friends, a very skillful agricultural chemist, advised putting in some oyster shells and molasses so as to make some saccharate of lime. I didn't know what saccharate of lime was but I thought it had a sweet sound—I knew that the hens needed something like oyster shells to work in their gizzards—I thought they might like the molasses, and my chemical friend told me that the molasses would make a solution with some of the lime in the oyster shells. I did not ask the editor of the POULTRY KEEPER to eat the hen food or the molasses and oyster shells. As he remarks "what a dose for a hen," I remark "what a dose for a man!" I left it to the hens, and another friend's hens tried it and some how or other they seemed to get out of the mixture when they gobbled it up, something or other that made them good layers, at a very little cost. Now if the hens like it, and if as it proves to be the fact, the oyster shells do yield some lime in solution when mixed with molasses, corn smuttings and skimmed milk what objection has the editor of the POULTRY KEEPER to leaving it to the hens? I have none.

Now my good friend finds fault with me for several other things. He says I try to convince poor men that they can live on five cents a day. Well I never did try to do that but what a good thing it would be to be able to teach a man to get all he wants to eat for a day for five cents when he only has five cents to pay for it. Some of our politicians took up the notion that I was trying to break down wages in my attempt to show how cheaply good food could be provided at less cost than it is now. In order that men might get a living at less cost without wasting their money in these hard times, I happened to show how anybody who choses to, could live in Boston, have good food in quite a variety, well cooked, for one dollar a week. Among other things I recommend a stew made of shin of beef because it is not only cheap but because it is used in the very best hotels to make the very best kind of soups and stews.

One of the candidates for the office of Governor, who in his personal capacity is a very mild mannered man, turned on me with a wrath corresponding to what the editor of the POULTRY KEEPER exhibits in his rebuke to me for "talking chicken," and he referred with derision and contempt to shin of beef soup. I was asked if I did not mean to reply and to defend the shin bone of the beef "critter." But I told the young man who put the question to me that I thought people could weigh for themselves the relative merits of the shin bone of a beef against the jaw bone of an ass and that ended the matter.

If the editor of the POULTRY KEEPER can show poor people how to live on five cents a day I advise him to do it. The nearest approach to it that I have ever known is in Georgia, where the week's ration of an adult field hand of a peck of meal and three pounds and a half of bacon, can I am told, sometimes be supplied to him for fifty cents or less. I am a Yankee and I guess our brother in black uses oyster shells and molasses in raising the chickens by which he ekes out the rather meagre ration! How else is it that he gets them? I don't know any class of working people that get so much power to their elbows for the money that they spend for the food that they like best, as the working people of the South. But now I may horrify the editor of the POULTRY KEEPER and your readers by giving them a leaf out of a whaleman's book: It refers again to molasses. The whalemen fry griddle cakes and sausages together and eat them with *molasses* and mighty good food they are!

But the editor tries to take me up and shake me again because I said in my letter to you a phrase as follows, "You know you can impart flavor to the flesh of poultry." Well the editor says that "we knew that before." That is just what I said. Every goose knows that as well as other fowls. What does he want to convert himself into an impetiginous scroyle for on that account Now again he says that the poultry keepers know all about molasses and that it is too fattening and that a laying hen should not be fed too highly on carbonaceous food. Well I did not say how much molasses the hens ought to have or how much oyster shells. I supposed any poultry keeper would know enough not to give them too much.

But I must wind up. It appears to be a fact that my chemical friend was right; one can dissolve some of the lime in the oyster shells with molasses in the way that I proposed, so that the hens can get it. I did not say that you can dissolve a pound of oyster shells in four pounds of molasses; I only said you can dissolve a pound of lime in four pounds of molasses, and I really did know that although I am a differ in chemical science, oyster shells are not what you call lime in their native condition. What I thought I knew was that oyster shells are a source of lime and in that it would seem that I was right. Here I am content to appoint an umpire to whom the whole matter shall be submitted and I will abide by the decision of the umpire. You yourself and the editor of the POULTRY KEEPER are to choose the umpire. You must pick out the most intelligent hen within your acquaintance, give her some of my hen food and if she cackles loudly and at once lays an egg, I shall regard that as a decision in my favor Lest my friends should again expose my ignorance by saying that the hen won't cackle until after she has laid the egg—then perhaps you will select a rooster, put some of my hen food before him and see if he calls the hens up to eat it as a part of the necessary preparation for laying eggs in which he may also share.

EDWARD ATKINSON.

HOW MUCH FEED PER HEN.

How much food should a hen be allowed so as to give her enough and yet not overfeed her. This is a difficult question to answer, although it is frequently asked. Before attempting to give an estimate for a ration we will present the following points:

1. No two hens are alike. One will eat more food than will its companions.

2. A hen that is producing eggs requires more food than a non-layer, and yet the non-layers may secure the larger share.

3. Brahmas are larger than Leghorns and eat more food. One Brahma hen may also eat more than another hen of the same breed.

4. A hen may eat greedily to-day and yet eat but little to-morrow. Appetites differ and vary with hens the same as with humans.

5. A hen may eat largely of grain one day and prefer some other food the next day.

6. A quart of corn per day for ten hens is the estimate, but if the hen eats grass, worms, or other foods, the amount must be deducted from the grain. How can it possibly be done?

7. A quart of corn per day may be the correct amount for one flock of ten hens while another flock may consume two quarts.

8. It is, therefore, impossible to measure out a certain quantity of food as a regular ration for a flock, as the amount of food required can only be known *after the hens have eaten.*

9. The best way to feed is to give about *one-half* as much as you may suppose they require, in the morning. Then scatter millet seed (about a tablespoonful) in leaves or litter, so as to make them work by scratching. This will keep them warm, harden the flesh, and promote their appetites. At night give them *all that they will eat.* When each hen has enough she will walk away from the food. When the last hen has finished her meal remove the food that is left over. This is the only way to *know* how much food to give.

10. Foods also vary, and it is not always an easy matter to procure two lots of food that are alike in quality, and no two hens will eat the same amount of food nor the same kind as readily as they will other foods.

11. The point is not to *overfeed.* This is where the most mistakes are made. When a hen is overfed she becomes lazy and sluggish, is subject to indigestion, becomes too fat, and will lay but few eggs. Soft-shell eggs or double-yolk eggs indicate that the hens are overfed.

12. Keep sharp grit before the hens. Also, keep a cigar box, filled with ground bone (not bone meal), where they can help themselves. If you want eggs reduce the grain supply and give more *lean* meat and cut clover hay, scalded. Bran, middlings, milk, cabbage, potatoes, etc., or any *variety* of food, will also be an advantage.

FISH FOR POULTRY.

Up on Puget Sound fish are so plentiful that they are of but little value, and a subscriber at Elgin, Wash., wishes to know if he is correct in feeding salmon to his hens He writes as follows:

Being somewhat of an aged subscriber to your paper I take the liberty of calling on you for advice. Where I am located, on a creek emptying into Puget Sound, for about three months in the fall there is an immense run of salmon, so I am feeding them to my chickens. I have about 150 hens. They relish them well, but I am getting very few eggs. Are fish considered good feed for poultry? I cook the fish, drain off all the water, and stiffen it with middlings or shorts. Every alternate morning I mash up boiled potatoes with the shorts. This is their morning feed. At night I feed nothing but good clean oats. The hens are looking well, but I get few eggs. Is this ration anywhere near complete?

There is no better food than fish, and it may be used freely if the feeding is done judiciously. The reason the hens do not lay in the above case is, perhaps, because they have been overfed, and are too fat. This may be known by their beginning to lay soft-shell eggs, or double-yolk eggs. We suggest that the morning meal be reduced, giving a liberal allowance at night.

BRO. HUNTER'S SURPRISE.

In *Farm Poultry,* for December, Bro. Hunter, in alluding to a catalogue received by him, remarks that the manufacturers sent out a circular letter to editors, asking for their photographs, etc., and says:

Four or five youngsters took the bait, and we are not a little surprised and amused to find the veteran Jacobs among them. He has so keen a scent for the "free ad. bait," it is certainly a surprise, and Bro. Jacobs himself must have felt no little chagrin at the company in which he finds himself.

By way of explanation we will state that we did not send any photograph, but the parties got one in a round about way. We *were* surprised at the company we got in. Not a good-looking one in the whole lot, and the "youngsters" seemed as if about to prance around like young colts. An inquiry on our part brought the answer back that they wanted at least one "old rooster" among the lot, and selected us. We understand that several attempts were made to get one of Bro. Hunter's photos from his friends, so as to place us together, but without success.

BLIND IN ONE EYE ONLY.

Why does a hen, (or a whole flock) become blind in one eye, and usually in the left (or right) eye? That is, why does it happen that each hen in a flock will be blind in one eye only? A lady at Lansdowne, Pa., relates her experience, and says:

"What causes my chickens to become blind in one eye? I have had at least a dozen to become so affected. One has a swelling on the eye but the others seem to discharge from the eye until the eye is completely gone."

The cause is due to a draught of air on that side on which the eye is swollen. This draught may come from a top ventilator, a crack in the wall, or a nailhole. The remedy is to anoint the face, eyes, head and comb with sweet oil, once a day, first sponging the eye with warm water, and wipe dry. Keep the birds on straw, removing the roos. Be sure and discover the source from whence the draught comes.

OVERSTOCKING THE MARKET.

With so many poultry farms springing up it is feared that there will be an overproduction of poultry, and that the market will be overstocked. To those who entertain such fears we will state that such a result has happened every year. We never visit a market that is not overstocked. But with what kind of stock? We have seen piles of carcasses that were unfit to be carried home by consumers, not that they were decomposed, but because the birds were scraggy specimens of their kind. We have never seen the market overstocked with choice fowls, however, and there is plenty of room for good stock in the market at all seasons. The increase of population keeps pace with production. Fifty years ago shoes were cheaper than at the present day, yet we had no machinery for making shoes. We have bought heavy turkeys for fifty cents each, spring chickens for ten cents each, with eggs at six cents per dozen, and the farmers did not complain of the prices. To-day the farmers would be discouraged over such an outlook. There never has been a time when purchasers would not pay a little more than the market price for a choice article, and the market has never yet been overloaded with the best.

Greater loss results from the manner in which poultry is dressed and shipped to market than can be estimated, as no comparison can be made in order to arrive at a knowledge of facts; but an inspection of the stock in the markets of the large cities would educate the farmer, who should endeavor to seek information in that direction in regard to how to secure better prices. The quantity of dressed poultry that is daily sent to market in an unsalable condition is enormous; and not only is an injury done to the farmer himself who is thus careless in the matter, but the prices of other articles are to a greater or less degree affected in consequence.

At certain seasons of the year there is a depression in prices, caused by a desire to reduce the number of fowls in the flocks. As long as the laying hens are producing eggs they are retained because they are profitable; but when the supply of eggs falls off, the hens are sold without delay. This usually occurs in the late summer months, when the markets are said to be overstocked, and the large supply keeps prices down. There is no way to avoid this annual influx of surplus stock, for it is impossible to educate the people on the subject; but there is a way to secure better prices by those who are well informed if they will aim to do so.

It may be stated that under all conditions, whether the market has a full supply or not, there is a demand for something better than the market contains. Hotels and restaurants may be satisfied with ordinary grades, but there are customers who are willing to pay a high price for a choice article. If the farmer who is about to reduce his flock to a minimum will take sufficient time to get the fowls in proper condition for market he can add from twenty-five to fifty per cent. to their value.

Before determining to ship poultry the first thing to do is to place the fowls in a small yard (not coops) and feed them four times a day, giving grain plentifully and and allowing a variety of food. In about two weeks a bird can be made to add two pounds to its weight, if it is of large frame, and will sell for five cents per pound more than regular market prices. If the bird weighs eight pounds it will have gained in value from twenty-five to forty cents, according to the extra price obtained, as well as a value for increased weight, thus giving a large profit for the time used in fattening.

EGGS BY THE POUND.

If egg were sold by the pound it would revolutionize the breeds. As we have before shown, the hen that lays the largest number of eggs may not really be performing as great a service as one that lays fewer eggs but which are of larger size. Suppose a hen lays 120 eggs in a year, the eggs averaging ten to the pound. Her product would be twelve pounds of eggs in one year. Now, let us suppose that another hen in the flock layed 104 eggs, the eggs averaging eight to the pound. In the first case the hen that produced 120 eggs would be the more valuable, yet she has not performed as much service as the one which produced but 104 eggs as the eggs of the latter are a pound heavier, and if eggs were sold by weight she would give a larger profit on fewer eggs Selling eggs by weight gives both the producer and the consumer a fair sale and purchase, and farmers would begin to select the breeds that produced large eggs. They would then be compelled to improve their flocks in order to secure the best market prices for their eggs. The Black Minorcas and the Black Spanish lay larger eggs than any of the breeds, and the Houdans come next, followed by the Brahmas and Cochins. Of course there are individual hens that will lay eggs far above the size pertaining to the breed, and our selections may not be strictly correct, but it is admitted that the Minorcas and Black Spanish are at the head as layers of large eggs. The two breeds are very closely related, and it is safe to say that the one was derived from the other. We have seen whole baskets of eggs from these breeds, of which seven eggs to the pound was the average.

MR. EDW. ATKINSON REPLIES.

We give, in this issue, Mr. Atkinson's reply, taken from the *Southern Fancier*. We do so in order to be *fair* with Mr. Atkinson, and we admire his good nature as well as enjoy his wit.

His reply, however, is not to the question. The *Fancier* states that Mr. Atkinson is a *prophet*. He foretold the future of cotton, and is now going to do something for the peanut. He endeavored to get the hen in his fold, also, but began with a diet of molasses and oyster shells, which is not exactly compatible with old theories. It is true that all are aware of the fact that free labor and the increase of acreage in India to cotton, influence the supply, but that does not detract from Mr. Atkinson's prophesy.

Although every schoolboy knows the meaning of "LL.D," "Ph.D." etc., we naturally added "whatever that means,' in order to draw the line somewhere, as every man who cures "corns" or sells a "healing salve," now affixes so many letters of the alphabet to his name, as an appendage, that one is liable to become mixed but as Mr. Atkinson derived his honor from *South Carolina*, for being an "original abolitionist," we are no longer surprised at his mixture of oyster shells and molasses, nor would we now be astonished if he should suggest chopped barb wire and bean soup for laying ducks.

We commend his example in endeavoring to reduce the cost of living, and in enabling poor men to curtail expenses. No doubt he means well for them, but the loss of luxuries to the poor man is simply greater profit to some others, while the Georgia ration of a peck of meal and three and a half pounds of bacon is a poor compensation for the "power of their elbows" as he styles it.

Mr. Atkinson, however, as we understand it, proposes to unravel some kind of a mystery with the peanut, and according to the *Fancier* he is first seeking information, and asks, says the *Fancier*, as follows:

On what kind of land are peanuts grown? What fertilizer, if any, promotes the growth? Is the plant growth heavy? Is it used for forage or fodder, either in the silo or dry? What quantity can be grown on average acre? How much weight in the shell, and how much in the kernel?

Possibly Bro. Jacobs, whose attainments are many-sided and practical, might be able to give Mr. Atkinson some information on this line, as he lives up in the sandy waste of New Jersey, which is just the soil for peanuts.

It is true that Mr. A. gives the facetious and sarcastic editor of POULTRY KEEPER a Roland for his Oliver in another part of this issue, but that was expected, for the Bostonian is as much an adept in badinage as in practical science.

If any of our readers have grown peanuts we ask them to correspond with Mr. Atkinson. The information desired can be secured from the agricultural department at Washington, or by a visit to the James river section of Virginia, and Mr. A. might separate the shell from the kernel of a peanut, weigh each, and at once satisfy himself in regard to the latter inquiry, but he has some kind of an "astonisher" in view which no doubt prompts him to go through the formality of first *seeking* facts, digest them, and then launch out the prophesy. It is possible that he will predict lower prices, as there may be more land devoted to the crop, or he may inform peanut growers that they should sell them on the half shell.

Now, we appeal to the umpire to decide in our favor. We admit that Mr. A. makes the best case he can out of a knotty position in which he found himself, but his good nature, and witty reply, is worth something, as we can safely assert that such qualities are rare with many, and if Mr. A. will pardon us for any words that were out of place on our part we will gladly endorse the umpire's decision if in his favor.

BOOKS FOR FIVE CENTS EACH.

The following are *special subjects*, and though they are *back numbers*, yet each is worth a year's subscription.

You cannot get a high-priced book that will give so much on the subject selected.

Any of the following for only *five cents in stamps*:

Testing Eggs, (illustrated.) August, 1885, Sept., 1890; June, 1891, and June, 1892, the latter full of illustrations.

Plymouth Rocks, (description) Preserving Eggs. Sept., 1885.

Buff Cochins, (description) Oct., 1885.

Rouen Ducks, (description). Dakin's Brooder. Dec., 1885.

How to Ship Poultry. Toulouse Geese (description). Sept., 1886.

Plan of a Broiler House. Breeds of Ducks. The West Chester Gape and Roup Cure. Oct., 1886.

All About Roup, eight columns. Nov., 1886.

All About Cholera, seven columns. Dec., 1886.

Testing Eggs, by Campbell, three columns. Dec., 1886, and Jan., 1887.

Caponizing (illustrated). Jan., 1887, and March, 1892.

Gapes, four columns. March, 1887.

All About Turkeys, seven columns. March, 1892.

How to Make the Hot Water Incubator, (illustrated). French Mode of Cramming Fowls. Mrs. Moore's Egg Preserving Recipe. Why Chicks Die in the Shells. July, 1887.

All About Preserving Eggs, six columns. An Egg Turner. Harris' Poultry House. Sept., 1887.

All About Lice (illustrated). Oct., 1887, and Dec., 1891. The latter shows the kinds of lice, magnified.

Poultry Diseases. Crop-Bound. Egg-Bound. Feather Pulling. Soft-Shell Eggs. Hens Eating Eggs. Bumble Foot, Seaboy Legs, Worms (six columns on diseases). A Big Egg Farm (prices). Nov., 1887.

An Incubator Regulator. Plans of Incubators and Brooders. Dorkings. December, 1887.

Making Condition Powders. Points for Pasting Up. How to raise Ducks. Shipping and Dressing Poultry for Chicago. January, 1888.

How much Feed to Give. Poultry House Floors. Lee's $10 House. A Cheap Tank for Incubator. A Cheap Egg Tester. June, 1888.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Feb., 1888. Also April, 1892.

Poultry Houses. April, 1887; Oct., 1888, and July, 1891. Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec., 1892.

The Hen and the Food. July, 1888.

Fertilization of Eggs, five columns. The Ferrett Feeding for Eggs. Sept., 1888.

Description of Breeds—Light Brahmas, Plymouth Rocks, Pile Leghorns, Langshans, Houdans, and Brown Leghorns. Five columns. How to Place the Thermometer, (illustrated.) Nov., 1888.

Shipping Poultry to Market—all about it. Dec., 1888.

How to Feed for Eggs. How much to Feed. The Kinds of Food. Condition Powders. A Whole Book in a Small Compass. Nearly eight columns on Feeding, with tables and proportions. Oct. 1891.

The Bronze Turkey (description). More About Feeding. Preserving Eggs with Cold Air, Bees-wax, and Paraffine, Feb., 1889.

Shipping Coops, (illustrated). The *Farm Journal* Hot Water Brooder. Mar., 1889.

Young Turkeys. All About Geese. Pigeons for Profit. Mating Plymouth Rocks. Preserving Eggs. Partridge Cochins. Eleven Reasons Why Eggs Do Not Hatch. July, 1889.

Brooders, Incubators, Appliances, Poultry Houses, etc., (many illustrations). Aug. 1889, and Aug., 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte. Fertilization of Eggs. Scoring Games. Oct. 1889.

The Ventilator discussion. Dec., 1889, and the "Principles of Ventilation," in March, 1890.

Rudd's Hot Water System. May, 1890. Two pages (illustrated).

Rankin's Great Duck Farm, (illustrated). July, 1890.

Science of Incubation, by Hock, two pages. Oct. 1890.

Artificial Incubation in Egypt, (illustrated). Dec., 1890.

Spongia as a Roup Cure—four columns. Jan., 1891.

A Whole Library of Points. A grand issue. Aug., 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892.

Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept., 1891.

Each one of the above issues contains other valuable information also. The subjects named are the *leading* articles.

The reader should keep this for reference. It will save much time inquiring for special articles.

The issue on Poultry Houses, Brooders, Appliances, Feeding for Eggs, Caponizing, Prices for the Whole Year, Preserving Eggs, Turkeys, Points on Hatching, Points on Raising Broilers, Testing Eggs, and some others, are worth fifty times the price, as there is no book published that can even compete with a single number.

VALUE OF PURITY OF BREED.

No pure-bred fowl should have even a slight defect that may indicate impurity. No better way of illustrating this can be shown than to cite the case of two poultrymen that came under our observation. One of them bought a pure-bred Plymouth Rock cockerel from the other. When the purchaser carried the bird home he found a small speck of a feather on the shank, near the toe, so very small that he resorted to a magnifying glass to assure himself of its presence He returned the bird. Now, we are certain that some of our readers will not sanction his course, but he did just what was proper. That little speck of a feather was an evidence that there was something wrong with the breed. It meant that the cockerel was from stock that could not be depended upon to sire chicks that were free from defects. A pure breed, without feathered legs should not have the trace of a feather on the shanks. Yet we notice that many farmers use Plymouth Rocks with quite a number of feathers on their legs, and they might as well use mongrels, as far as the purity of the breed is concerned. If you wish to improve, try and select the best for the purpose. The male is more than half of the flock in breeding, as he will sire all the chicks. If he is not strictly pure, your labor in improvement will be lost.

Just how much the farmer loses by not knowing more of the breeds cannot well be estimated, but that he pays dearly because he knows very little about the breeds of fowls is true. We cannot understand how a farmer whose duty is to know all about farming, live stock and management should be content to rest in ignorance regarding the breeds. Why should a blacksmith, whose work is with iron, know more about the breeds of fowls than the farmer, yet it is the case that many persons who are not farmers, but who keep a few fowls, know more about breeds than farmers. Is a farmer really a farmer, in the strictest sense of the term, when he simply plows, harrows and cultivates, or milks the cows, and yet does not know the kind of stock he keeps. And the farmer taxes himself more for his lack of information than the state imposes on him. He loses a pound or more on every fowl, and reduces his eggs a dozen or more from each hen. All this he does because he does not know the points of the breeds, and the sum total of his losses in a year are much larger than from any other kind of mismanagement.

EGG RATIONS.

So much depends on the individual characteristics of fowls that to attempt to formulate a ration for egg production would be an impossibility. We can form some estimate of the food for animals, which, though not always correct, materially assists in arriving at a knowledge of requirements. The animal produces young but once or twice a year, but the hen produces its young (the egg) daily. When the hen lays an egg to-day, she may fail to do so to-morrow, or she may allow an interval of two or more days between her deposits. It is this peculiarity of the hen that makes it a difficult matter to feed her a ration exactly suited to the purposes for which she is intended by the farmer when he adopts her on the farm.

It is reasonable to suppose that the best food for eggs consists of those substances containing the elements which produce the eggs, and they must be balanced in their proper proportions. To expect farmers to do this is to look for an improvement for which all of them are not prepared, as it requires more skill and care than is usually bestowed. But there are some simple methods which can be easily followed, and which will be of advantage in at least securing better results. To leave the old, beaten paths and change to new directions will add something better, and to resolve that the hens shall prove as profitable as other stock will surely lead to greater production, for it is through the guidance of the farmer, after all, that the best classes of stock fulfill the expectations of those who manage them.

It is only necessary to remember that which is known, and that is the fact that eggs can only be produced from foods of variable elements, for the reason that the eggs vary. In winter warm quarters are necessary, because there is a saving of food by a saving of warmth. The farmer does not have all kinds of food at his disposal in winter, and he should be willing to go outside the limits of his farm to procure foods to be added to those which he has, such as meat and bone. Buckwheat, barley and millet seed are additions, and, with milk, wheat, corn and chopped clover, there should be no difficulty in supplying the hens, but the main object should be to feed in a manner to avoid an excess of any particular food, or the hen, herself, may become unbalanced—too fat—and be as useless as if not fed at all.

POULTRY IN ORCHARDS.

It is an advantage to all fruit growers to keep fowls where there are large orchards, not only for the profit to be secured from poultry and eggs, but also for the protection afforded the trees by the hens in the destruction of insects. Of recent years fruit growers have found that an orchard thrives best when it is cultivated, manured and sprayed, and that the work so bestowed can be to their advantage in many ways. The first cost is that of the land. The greater the production of the land the lower the cost of the articles produced proportionately, and if more than one crop can be grown in a single season the land is consequently used to greater capacity.

Orchards are idle a large portion of the year. After the leaves begin to fall, and until the blossoms appear in the spring, the land is simply holding the trees, and during the growing season but little, if any, work occurs in the orchard. If poultry houses were placed at different points in the orchard the hens of each flock would have ample space upon which to forage, shade would be secured and the land would also provide grass and seeds in abundance. It has been demonstrated that where a flock of hens are in an orchard and the ground around the trunks of the trees has been spaded until the soil is loose, the fowls will industriously work at the base of each tree and destroy insects that would otherwise escape; but where this is not done, the hens are more liable to content themselves in hunting over the fields instead of scratching around the trees.

The fruit grower can combine fruit growing and poultry raising without occupying more land than would be required for one pursuit, and the results from the orchard and from the hens would be more satisfactory. The fowls can be made to assist in protecting the trees by giving them loose soil for dusting near the trunks of the trees, and placing their drinking water under trees and feeding them at the base of each tree.

CAPITAL REQUIRED.

When a small flock is made to give a profit which is verified by the accounts, it is usual to credit the hens with all the poultry and eggs consumed in the family, and to charge all food allowed, but no account is made of the interest on capital and the labor performed. It is true that the capital invested, when only a few hens compose the flock, amounts to but very little, but it is an item nevertheless, and should be considered, as the cost of the labor is a factor which may change a profit to a loss. The labor may be performed by one of the members of the family or by some one whose labor is not considered; but no matter how insignificant it may appear, it is worth something and would have to be paid for if done outside of the family, and is a part of the expense. So with the capital invested in the poultry house, fences, ground and in the poultry. It is entitled to interest, and the small amount of the capital does not affect the case.

It is an easy matter to omit or overlook the expense of interest or capital in the accounts for a small flock, but, when the whole time of the poultryman must be given to the management of a large number of fowls, the labor is more costly than the food, while the capital invested may be large. The value of a thousand hens, at fifty cents each, would be $500, while the buildings, fences and use of the land would amount to a sum reaching $1,000 The capital would be in the business, and before any profit can be declared, the interest on the capital must be first deducted. If help is employed, wages must be paid, and there are commissions to be met for shipping and selling.

It is better to keep an account, even with a small flock, than to give the hens attention and care without being aware of the cost. If all the details were known with a small flock, and the item of labor considered, there is no doubt that those who believe that the poultry business will pay would be careful of the outlay in the beginning, and not venture too far without a full knowledge of what is required to insure success. When accounts are kept, more is known of how the cost is made than can be taught in any other manner, and one of the strictest rules should therefore be to keep exact accounts.

SOMETHING YOU WANT.

It will cost you only five cents to get the following back numbers, and they are worth $10 each if they could not be procured when desired. Bear in mind that there are a large number of *illustrations* offered—as the following shows:

Brooders, Incubators, Appliances, Poultry Houses, etc. (many illustrations). Aug. 1889 and Aug. 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte Fertilization of Eggs. Scoring Games. Oct, 1889

Poultry Houses. April, 1887, Oct. 1888, and July, 189 . Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec. 1891.

A Whole Library of Points. A grand issue. August, 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892

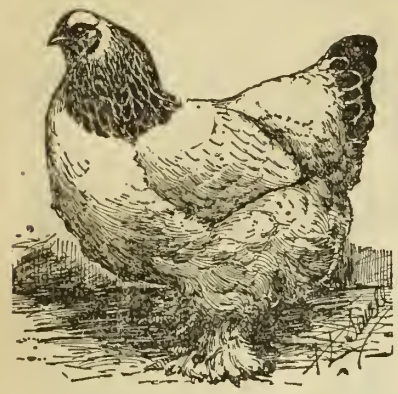
Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept. 1891.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Houghton's (Cleveland) Poultry House. February, 1888. Also April, 1892.

Each issue contains other valuable information also. You have the whole outfit shown of the pipe system of brooding in the brooder issue, and the forty-two rules on raising broilers has the whole thing. And yet you can get any one of them for only five cents.

MR. WOOD'S LIGHT BRAHMA.

The cut of Light Brahma hen is from Mr. N. E. Woods, Pecksburg, Indiana., and she has an excellent record, having won at Indianapolis in 1891 as a pullet, and as a hen in 1892, her score. by Mr. Felch, being



LIGHT BRAHMA HEN.

FROM N. E. WOOD'S, PECKSBURG, IND.

96, the score of his cockerel being 93, and of his pullets 94½, 94, 96, and 94 respectively. Mr. Wood's breeds Plymouth Rocks also, and makes a specialty of Cotswold and Shropsbire sheep. In 1890 be won at Indianapolis over 200 competing Brahmas, and many of the best breeders buy their birds of him.

A MOVABLE FENCE.

Mr. C. C. Moffet, Ireton, Iowa, proposes to have movable runs, and as bis proposition is one worthy of consideration, we give what he says as follows:

How would it do to keep a pen of Light Brahmas (about nine birds) after grass starts in the spring, in a lath fence and movable pen? Have good blue grass, red and white clover, and I could make place of light lumber so as to be handy to move. My Brahmas are not laying yet this winter, as they moulted rather late. The Black Leghorns are laying nicely, even away up here, in this wild and woody northwest, for which I give thanks to the POULTRY KEEPER. I consider each paper a great big double-yoked egg, a complete ration of knowledge to every one interested in poultry that will read it.

Living in a cold climate his selection of the Light Brahma is an excellent one. It will be noticed, however, that his Leghorns are all laying. As we have always advocated that Leghorns are good winter layers, if properly managed, we are pleased with bis report. The movable houses and yards are excellent. In our books *Poultry Keeper Special* Nos. 1 and 2, we endeavored to give some plans of bouses and yards, which no doubt will be acceptable.

POULTRY FOR PROFIT.

This book is No. 1 of our series, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the POULTRY KEEPER, and send sixty cents, we will send the book, and also the paper for one year.

JUST READ THIS!

Fifty views of the World's Fair, the Poultry Keeper one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for fifty cents to new subscribers. See adv.

A. G. Clemmer, Morwood, Pa. 8 leading varieties. Pure bred poultry. Eggs $1 ₩ 15, ₩ ₩ 60. Cir. free.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Buff and Brown Legs., B. Mins., W. P. Rocks, B. Langs. Stock cheap. F. G. Sheffer, Glen Rock, Pa.

B. P. Rocks, Blk. Langshans, G. Wyans. $1 per 13. No Cir. Mrs. Sue C. Searight, Carlisle, Pa.

Buff Cochins. Fine trios, $6.00; eggs $1.00 for 15. **J. W. SILCOTT, Snickersville, Va.**

B. Mins., S.C.W. Leg., $1 per 15; B. Lans. Houds., $2 per 15. Elmer K. Clemmer, Harleysville, Pa.

Black and Wh. Langs. and Wh. Cochins, Barred P. G. Rocks. Eggs $1.00. S. L. Farrar, Bath, Me

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Buff Leghorns, A. D. Arnold's strain. Eggs $2.50 per 13. **T. J. BENNETT, Option, Pa.**

Book on diseases, cures, plans for incubator, 10 cts. silver. L. O. FULTS, Jeffersonville, Ohio.

BROWN LEGHORNS, CHOICE STOCK. A. E. HOLMAN, Hammonton, N. J.

BUFF LEGHORNS that are Buff. Circular free. Send Geo. S. Barnes, Battle Creek, Mich.

Buff Legs., Lt. Brahms, Barred Ply. Rocks. Fine stock, fair prices. Geo. H. Lee, Exeter, Neb.

Choice Buff Legs., Lt. Brahmas. Eggs $1 per 13. MRS. H. A. YOUNT, Box 70, Dakota, Ill.

CAPON Instruments postpaid, $2.50. G. P. PILLING & SON, 115 S. 11th St., Phila., Pa. Book free.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

C. W. McFarland, Iberia, Ohio, Breeder and Imp. Silv'p'gled Hamburgs, S.C.W. Leghorns. Cir.

Christian Schmun. Levin, Pa Breeder of 10 varieties of pure bred poultry. Fancy Pigeons.

DR. JOHN W. KING, Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

Eggs for incubators, at 50 cents per dozen. J. F. Clarke, Marietta Poultry Farm, Marietta, Ga.

Eggs from fine strain Bl. Minorcas, $2 per setting. Mrs. H. B. Barnes, 230 East Main St., Ionia, Mich.

Eggs $1.00 per 13. Send for large illustrated circular. C. D. SMITH, Fort Plain, N. Y.

Eggs from prize winning B. P. Rocks and S. C. B. Leghorns. WM. WEST, Pecksburg, Ind.

EGGS 28 P. R., or 13 L. Brahma, or 5 Wh. H. Turkey Eggs for $1. Slaymaker & Son, Dover, Del.

EGGS! S.C.B. Leg., $1 per 13; Bu. Cochs., $2 per 13; Duck, 50c. per 11. Geo. Meredith, York, Pa.

For Sale. Pure bred Sil. La. Wyan. C'k'ls., eggs in season. D. H. Wotring, La Grange, Lorain Co., O.

For Sale: An Improved 200 egg Excelsior Incubator as good as new. J. W. RICE, Harmonsburg, Pa.

F. F. Alderfer, Harleysville, Pa. Breeder of 8 varieties of pure bred poultry catalogue free.

For sale or exchange.—A few good Lt. Brahmas, for choice Jersey cow. A. N. Doane, Gainesville, N. Y.

Games only. B. B. Reds my specialty. Stock, Eggs in season. T. N. Salisbury, Russellville, O.

Grand Buff and Wh. Leghorns. Eggs $1.50 to $3. Good layers. John H. Hellerman, Doylestown, Pa.

High bred Barred Plymouth Rock eggs, $1 for 13, only breed kept. Mrs J. H. Stevens, Mt. Vernon, O.

Indian Games. Best stock procurable. Eggs $3 and $4. Circular. D. C. McElroy, St. Clair, Mich.

Ind. Games. Fowls for sale. Eggs, $1.50, 13; $2.50, 26. Jonathan Summers, Toledo, H't'gton Co., Ind.

Indian. Eggs $2.. B. P. R. and B. L. Eggs $1. Indians for sale. S. R. Miller, Chambersburg, Pa.

Indian Games, S. C. B. Leghorns, B. Astrachans. Eggs in Sea. Cir. W. A. Williams, Rome City, Ind.

JNO. D. SOUDER, Telford, Pa Breeder of 14 varieties of pure bred poultry. Catalogue free.

Leghorns, Br. Bu. Wh., B. P. Rocks. Prize winners. Eggs and Stock. O. P. PHILLIPS, Amo, Ind.

Mam. Br. Tu'ys and Toul. Geese, from prize winners, $5 a pair. Amanda H. Smith, Dows, Iowa.

Mammoth Light Brahmas. Eggs $1.00 per 15. Andrew M. Gallagher, Box 417, Norristown, Pa.

Pit Games only. Hennies. Stamp for Circular. **GEO. A. BOGERT, Pemberton, Va.**

Prize Wh. Holland and Br. T'k'ys Wh. and B. R'ks. Eggs $1.50. Samuel Millikin, Brookville, Ohio.

Printing, 100 letterheads, 100 cards, 100 envelopes, sent postpaid for $1.75. W. Speke, Lowell, Mass.

Plymouth Rocks for sale, at $1.00. Eggs $1.00 per setting. Address S. H. DAVIES, Blair, Neb.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

R. C. B. Legs., Forsyth, Montague and Croffut Strains. 15 eggs $1. F. R. Cutting, Waters, Otsego Co., Mich.

S. C. B. Leghorns, choice birds, $4.00 per trio. Eggs $1.00 per 13. W. T. BALL, Moline, Ills.

Send for circular of 14 varieties. Satisfaction guaranteed. L. G. ANDRUS, Elyria, Ohio.

Send for our beautifully illustrated circular of best breeds. Pleasure Poultry Yards, Marysville, Pa.

S. S. Hamburgs and S. C. B. Leghorns. Superior young stock; prices low. A. L. Cary, Lewis, O.

S. C. B. Leghorns, best strains. Cockerels for sale. Eggs $1 per 13. W. G. Wadsworth, Pittsford, Mich.

White Wonders, R. C. B. Leghorns and Blk. Mins. Stock and eggs. Wm Stellwagen, Gardeu, Mich.

1500 Ferrets, trained Ferrets, $3 a pair. sent C. O. D. Sam'l Farnsworth, New London, O.

$1.00 for 13 pure S. C. B. Leghorn eggs. WILSON TERRY, Stillwater, N. Y.

200 B. Turkeys from 18 to 24 lb. hens, 40 lb. tom. JOS. W. FLEMING, Buckingham, Ill.

$30 takes a No. 2 Imp. Excel Incu. and Brooder. Used only 4 times. W. Palmer, Etna, Ills.

45 leading variety of fowls. Eggs for hatching. Stamp for Cir. E. H. Rodham, Shullsburgh, Wis.

Barred Plymouth Rocks, two strains, one for the farmer the other for the fancier. Circular free. **H. J. HOLLINGSWORTH, Wheel, Md.**

Buff Legs., Ind. Games, S.S. Hamburgs. Send for circular and prices of eggs and stock. FRANK R. MINNER, Bechtelsville, Berks Co., Pa.

Buff Legs., Bu P. Rks., I. Gms., Bl. Mins., P. Rks. P. D'ks. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Buff Wyandottes (Buffington Strain), 10 Cockerels for sale, $1.50 to $5.00 each. Also pair Buff Ply. Rocks, fine birds, $5. Jordan Phillp, Jr, Hudson, N. Y.

Business hen of America, S. C. White Leghorns, C. H. Wyckoff strain. Eggs $1.50 per 13, $6.00 per 100. J. H. HALLACK, Cuba, N. Y.

Buff and Brown Leghorns, B. and W. P. Rocks, Indian Game, Bl. Mins., Lt. Brahmas, Bu. Cochs. Eggs $1 and $1.50 per 15. Cir. A. C Fulton, York, Pa.

B. Plymouth Rocks, trio, $3.00 to $4.00. Best Cockerels, $1.50. Eggs, $1.50 per 13. **A. O. ROBERTS, Atlantic, Iowa.**

BUFF LEGHORNS (Arnold's); I. Games (Sharp's and Frayn's); Bl. Mins. (Northup's) eggs, $1.50 per 15; $2 per 26. Lance & Co., Wash., N. J.

BUFF Wyandottes that are Buff. Eggs $3 per 30. 14 other varieties, $1 for 15 eggs, pure bred. Cir. W. E. Greenman, Triangle, N. Y.

DR. S. C. MOYER, Lansdale, Pa., breeder of L. Brahmas, B. and W. P. Rocks, S. and W. Wyandottes and Ancorias. Choice stock for sale.

EGGS. M. B. T., $1.50 per 11., T. Geese $2.00 per 11, B. P. Rocks, S.C. B. Legs., $1 per 15. MRS. G. HUFFSTETTER, Vesta, Ind.

Eggs for hatching from Wh. Hol. Turkeys and 9 varieties of pure breed chickens, at rock bottom prices. Cir. Mrs. S. E. Ellars, Washington C.H., Ohio.

EGGS from B. P. Rocks that are **Plymouth Rocks,** pure and sound, $2 for 13. FRED. B. CAMPBELL, Lee's Summit, Mo.

EGGS FOR HATCHING from nine profitable varieties. Send stamp for Illus. Cata., to F. A. Buhler, Racine, Wis Please name paper

Eggs from R. C. Brown Leghorns, Silver and Gol. Laced Wyans., L. Brahs., B. P. R'ks., Ind. G'ms. and B. Mins. Geo. McD. Mount, Spence, Md.

EGGS.—B. Turkey, Gobbler, half Wild P. Duck, Ind Game, mixed. Send for Cata. **MRS. H. C. BOGERT & SON, Cartersville, Va.**

EGGS. W. and B. Minorcas, W. and B. P. Rocks, W. Cochins, Wyandottes, Leghorns, $1 per 13. **S. L. HIBBERD, Lima, Pa.**

FOR SALE. 75 Light Brahmas, cockerels and pullets from my prize winners. Eggs $2 per 13. WALTER R. HIBBERD, Frazer, Chester Co., Pa.

For Sale.—Mammoth Bronze Turkeys and S. C. W. Leghorns. Choice stock. Eggs $1.50 per 13, $2.50 per 26. Mrs. M. L. Belden & Son, La Grange, Ind.

For Sale.—Three incubators, Hammonton make. Each 300 egg. All for $40, will do good work. **S. B. AUSTIN, Taunton, Mass.**

INDIAN GAMES. COCKERELS, $2.00. EGGS $2.00 PER 13. W. T. WILLIAMSON, Mason, Tenn.

Indian Games, (Majestic strain). Fowls cheap. Eggs in season. Four other kinds. **MRS. E. C. CHURCHMAN, De Soto, Iowa.**

INDIAN GAMES. Choice cockerels, from prize eggs, at bottom prices. Eggs for sale. The Hedges Co., Box 73, Snow Hill, Md.

It will pay you to send for the **BENSON BROODER, $7.00.** Cir. free. Agents wanted. **H. A. PETERSON, Benson, Ill.**

INCUBATOR EGGS, $5.00 per 100, $1.00 per 13, from large vigorous Plymouth Rocks. **C. M. IRISH & CO., Laurence, Mass.**

INDIAN GAME. Black and White Minorca stock for sale. Eggs in season. **REV. L. E. CRUMBLING, Hall, York Co., Pa.**

IMPORTED HOUDANS. Barred and White Plymouth Rocks. Eggs $2.00. **G. E. CHALFANT, Hammonton, N. J.**

IT WILL PAY YOU TO SEND FOR the Peep-'o-Day Brooder Circular, Dover, Mass.

I. X. L. POULTRY YARDS. J. F. Scholz, Prop., Erie, Pa. Eggs for sale from prize winning Gol. Wyandottes. Cir. free. Stock for sale.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

J. M. Lotridge, Cincinnatus, N. Y., breeds prize winning Sil., Gol. and Wh. Wyans., Wh. Legs., Bl. Mins., Red Caps, Blue Andalu. and Ind. G'ms. Cir.

Leghorns only. W. and B., R. and S. C. (Forsyth, Knapp, Tyler and Allen Str.) Stock and eggs. Cir. H. B. PINNEY, Calkins, Pa.

LIGHT BRAHMA COCKERELS. elegant birds, none better. **N. E. WOODS. Pecksburg, Ind.**

New Book, Profit and Loss in Poultry, sent free to any address. **J. E. WHITE, S. Glen Falls, N. Y.**

Pure P. Rock and W. Leghorn chicks just hatched for 8 cents each. Enclose stamp for circular. **JOS. D. WILSON, Rosemont, N. J.**

Prize Winning B. P. Rocks, S C. W. Leghorns and Toulouse Geese. **I. H. SHANNON, Girard, Kan.**

PIT GAMES ONLY ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

Plymouth Rocks, Pekin Ducks. Fine stock for sale, reasonable. **C. & A. MILLS, Mt. Palatine, Illinois.**

Pure green bone meal, granulated bone and crushed oyster shells. No Chemicals. J. H. SLACK, Bloomsbury, N. J.

ROSE C. W. Leghorns, bred especially for layers Stock and eggs. Pekin Ducks (Rankin Strain. Cockerels $2 to $3. L. W. Lighty, East Berlin, Pa.

Pure bred stock, Barred Ply. Rocks (Munger and Thompson Sts.). Eggs $2 per sitting; for Incu. $3 per 100. **E. J. BULL,** Yellow Springs, Ohio.

SPONGIA TABLETS (compound), the reliable Roup Cure. By mail, 35c. per box, 3 boxes $1.00. **W. W. HOGLE, So. Evanston, Ill.**

S. C. Brown Leghorns, bred from the leading strains, selected stock, cheap now. Eggs $1 and $1.25 per 15. Write to Box 41, New Holland, Pa.

Send to **S. K. MOHR, Hilltown, Pa.,** for pure S. C. B. Leghorns and B. P. Rock eggs, at $1.00 per 13, $2.00 per 30. Circular.

W. P. Rocks won at 8 largest shows. Cocks score 96½. Eggs $1 and $1.50 per 13. $6 per hundred. **D. L. STAUFFER, Spring City, Pa.**

W. and Br. R. C. Leg., W. and B. Pl. Rock and B. Minorca eggs, $1.00 per 15. J. L. WATSON & CO., E. Claridon, Ohio.

$1.00 for 13 eggs. Plymouth Rocks, Barred and Wh., Blk Langs. and Brahs. Choice stock. Mrs. T. SHUFF, New Berlin, Illinois.

$1.00 per 15 eggs, S. C. Brown Leghorns exclusively. Best strain guaranteed. Harry J. Worthington, Box 167, Doylestown, Pa.

200 Barred P. Rocks, 100 S. C. B. Leghorns, 75 Ind. Games, 50 Gol. Wyans. Breeding Pens, trios or single birds. E. E. Hudson, Kennedyville, Md.

500 fine large Chicks of all varieties at half-price. Eggs $2.00 for 15. Send 2 ct. stamps for 20 page Catalogue. Joe. A. Dienst, Columbus, Ohio.

700 Bronze T'keys, Toul. Geese, Rou. and Pekin D'ks for sale. Winners at Chicago. Prices reasonable. Cata. C. A. McClare, New London, Ohio.

500 First-class Fowls For Sale. Send for my illustrated circular free, or ten cents in stamps or silver for my fine Illus. Cata. telling all about them and how to build a hen-house to feed and manage fowls. Also Victoria hogs, address, **J. R. BRABAZON, Delavin, Wis.**

For exchange for pullets of Red Caps or Leghorns, or will sell cheap, 6 Brahma Cockerels, 2 Red Cap C'k'ls, 1 Red Cap Cock (2 years), 1 Bu. Leg. C'k'l. J. MOSS, 5602 Walnut Street, Pittsburgh, Pa.

Eggs from prize Buff Leghorns, Indian Games and Light Brahmas. First yard, $2.00 for 15; Second yard, $1.00 for 15. No circulars. **PLEASURE POULTRY YARDS,** Annville, Lebanon Co., Pa.

The good old **POULTRY MONTHLY,** Albany, N. Y., one year, and 13 eggs of our prize **S. C. B. LEGHORNS** or **BLACK MINORCAS,** safely packed, $125. **C. M. GOODSPEED, Post Master, Shamrock, N. Y.**

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE **WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.**

MUNGER'S AMERICAN STRAIN.

Have Won GRAND SWEEPSTAKES at the Great Chicago Shows, 1887 to 1891, on greatest number of birds scoring 90 and over, 446 scoring 90 to 98 1-2.

Bronze Turkeys, Barred and White Plymouth Rocks, White and Silver Wyandottes, Brown and White Leghorns. *25 Years Experience in Mating and Breeding. 40 Grand Breeding Pens for 1894.*

"MISS COLUMBIA." Weight 24 Lbs. at 8 mos.

Fowls and Eggs For Sale at all Times. Pairs, Trios and Breeding Pens Mated for Best Results.

Valuable ILLUSTRATED CIRCULAR Showing Ratings, Prices, Plans for Pens, Dry House and Yards Sent Free. The "POULTRY CHUM" 25c Per Year. Monthly.

Address F. M. MUNCER, DeKalb, Illinois

Railroad, Farm, Garden, Cemetery, Lawn Fencing. Prices down. Freight paid. *Catal'g. free.* **McMullen Woven Wire Fence Co., Chicago.**

LICE.

Are You Bothered With Lice?

Now is the Time to Begin to Fight Them.

Send 25 cts. for

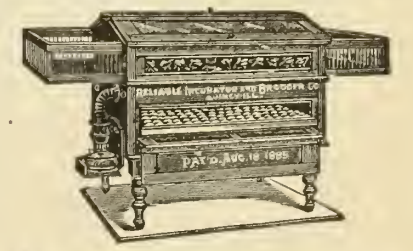
PRACTICAL WORK ON LICE,

Which will give you some pointers on how to fix your roosts, how to rid your hen house, your setting hen, your chicks, your laying hens, and in fact everything that is practical in fighting lice. It is made up from years of actual practice and research in its line.

Stamps Not Taken.

Address **H. E. THOMAS,** IOLA, KANSAS.

At the World's Columbian Exposition, Old Reliable Leads Them All.



Medal and Diploma ON OUR INCUBATOR AND BROODER COMBINED.

4c. stamps will bring you the finest Incubator Catalogue published. We can furnish you a hatcher that will please and with reasonable care last a life time. 45 Yards of High Class Fowls. 10 standard varieties. Address, RELIABLE INCUBATOR AND BROODER CO., QUINCY, ILL.

Brown Leghorns exclusively. Eggs from finest pens $1. E. J. MCCARTNEY, Jamestown, Pa.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks, choice Ckerels $2 to $3 each. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts. B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

LIGHT BRAHMAS, EXCLUSIVELY. (Felch and Williams Strain.) Eggs $2.00 for 13; $3.50 for 26. Stock for sale. **D. M POLING, Van Wert, Ohio.**

Buff Cochins, Lt. Brahmas, B. Langshans. This season I offer the grandest lot of the above breeds I ever owned. Prices reasonable. Order now. W. C. BYARD, Walnut Hill, Cincinnati, Ohio.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular. **H. D. MOULTON, Taunton, Mass.**

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pildimmon strains. P. H. Jacobs, Hammonton, N. J.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P. O. Goochland Co., Virginia.**

White and Black Minorcas, Barred Plymouth Rocks and White Wyandottes. Stock at all times. Eggs in season. **WM. J. SCHAUBLE, Erie, Pa.**

Hammonton Inc'bators & PRESSEY'S BROODERS are the best. Cat. free. Hammonton (N. J.) Incu. Co.

Hampshiredown Sheep: twenty ewes due to lamb in February, for sale, 2 and 3 years old. Poland China Pigs, Beagles and Foxhounds, variety of Poultry. Stamp for Prices and Circular. **A. ELWYN STRODE, West Chester, Pa.**

BARRED PLYMOUTH ROCKS exclusively. Eggs for hatching from stock that is fine, large and vigorous. Send for circular. **E. G. McCORMACK, Perryville, Indiana.**

EARL SHAW'S. MRS. ED. KLEVER'S. Buff Cochins, Lt. Brahmas, 300 grand birds for sale, exhibition and breeding birds, at lowest prices. Address us at Bloomingburg, Fayette Co., Ohio.

BUFF Wyandottes, Plymouth Rocks, FOWLS, EGGS. A clean sweep in prizes at World's Fair. **J. D. WILSON, Worcester, N. Y.**

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready. **B. A. FOX, Richmond, Va.**

Northup's Black Minorca. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock **CHARLES RIVER POULTRY YARDS**, Newton Lower Falls, Mass.

Bay View Poultry Farm, Chas. F. Newman, Huguenot, L. I., N. Y. B. and W. P. Rocks, W. Wyans., D. Brahmas, Pit Games. Imperial Pekin Ducks my specialty. Stock and eggs for sale.

S. **C. B. Leghorns,** Lt. Brahmas, Black Minorcas, standard breed. Stock and eggs. Send for **circular.** **C. C. CRAVER, York, Pa.**

LIGHT BRAHMAS. Heavy winners at Bloomingtou, Ill., Dec. 1892, and Indianapolis, Ind, Jan 1893. Stock for sale. **ALFRED DOYLE, Morgan Park, Ill.**

Dr. Wiant & Beringer, Marion, Ohio. Sole importers of Gelkein's Buff Leghorns. They are Buff, 100 extra fine breeders for sale at $2.00 to $5.00 each. Must have room. Improved Spongia Roup Cure, 25 cts., and 50 cts. per package.

DOLLAR EGGS. B. P. Rocks, W. P. Rocks and Golden Polish $1.00 per 13 until August, also Golden Polish stock for sale. I have secured fine new males to mate the above breeding pens. Good hatch guaranteed. O. G. BILLIAN, Quakertown, Pa.

WHITE LANGSHANS. My birds always win. Warranted pure stock. Large size, great layers. Eggs $3 per 13. $5 per 26. Catalogue free. GEO. P. COFFIN, Box 20, Freeport, Maine.

Eggs for hatching from 120 Buff Leghorns, $1 per 13, $3.50 $5.00 per 100. No eggs sold for hatching over six days old. **GIBSON FICKES, Newport, Perry Co., Pa.**

Buff Leghorns, B. Minorcas, S. S. Hamburgs, Egg Yard, No. 1, $1.50 per 13. yard No. 2, $1.00 per 13, $1.50 per 26, $2.00 per 39 or $4.00 per 100. White P. Ducks, 75c. per 11. Fall Creek Poultry Yards, L. H. AUSTIN, Prop., McLean, Tompkins Co., N. Y.

My Breeding Pens of Buff Leghorns, C. I. Games and Golden Wyandottes, contain as good birds as specimens exhibited at the World's Fair. I saw them. Eggs $2.00 per 15. Write to **F. A. HOWE, Waterford, Pa.** Satisfaction given.

Fine lot of White Wyandottes (Hathaway Bros.), Barred and White Plymouth Rocks. Eggs $1.50 per 13. Also fine large Pekin Ducks (Rankin's) for sale. Eggs $1.50 per 11. Address **J. H. BIDGOOD, Jr., Hodges Ferry, Va.**

SEND your name and address and receive my 1894 illustrated catalogue of **Bees, Queens** and **Bee-keepers Supplies**, free. **J. B. MASON, Mechanic Falls, Me.**

JUST READ THIS!

Fifty views of the World's Fair, the Poultry Keeper one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for fifty cents to new subscribers. See adv.

B. L. Langs. exclusively (Kirby and Smith Sts.) Eggs $1.25 for 13, $2 for 26. W. L. Hannahs, Briston, Ct.

WHITE FACE BLACK SPANISH, A specialty for 30 years. Eggs $2 per 13, $5 per 39. Circular and my photo free **JOHN BENNETT, Sunman, Ripley Co., Ind.**

$20 PHOSPHATE for Corn and POTATOES. Sold to farmers direct. No Agents. YORK CHEMICAL WORKS, York, Pa.

American Dominiques, also Rose S. C. B. and W. Leghorns. Illustrated Cir. free. Let us book your order now for eggs. GUILFORD SPRINGS POULTRY PARK, Guilford Sp'gs, Franklin Co., Pa.

BROILERS Eggs for incubators, $3.75 per 100, selected for sitting, 15 for $1.00. Fine vigorous pure bred B. P. Rocks exclusively. **G. W. PEABODY, Windham, Conn.**

VICTORY-1894. Reading 32, 1sts, 2ds and specials. West Chester, 8 entries, 5 1sts, 1 2d, 2 specials. Phil., '92, '93, 9 entries, 10 Prems. By purchase, 1sts N. Y. City, '93. R. and S. C. B. Legs., B. & W. P. Rocks. Eggs $1. Cir. W. W. Kulp, Pottstown, Pa.

INCUBATING THERMOMETERS. Tested and guaranteed accurate. Sent by express prepaid (at my risk) to any part of the U. S. for $1.00 each, or two sent at one time for $1.50. Orders filled same day received. **W. A. Wooldridge**, Gifford, Ill.

STEPHEN SPENCER, Morris Plains, N. J., breeder of high-class **LIGHT BRAHMAS** for many years, prize-winning at several leading exhibitions. Choice cockerels and pullets for sale, $3.00 to $5.00 each; best strains. Eggs, from prize stock, $2.00 for 13. Write for wants.

ROUP, CANKER AND GAPES CONQUERED. DR. OWSLEY'S SURE CURE FOR ROUP will do it every time. A new and scientific remedy and guaranteed to cure every case. Bottles 50 cts. and $1.00. Sold only by M. F. Stelluagen, St. Ignace, Mich. Breeder of high class poultry. Stock and eggs for sale.

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN** and **WHITE LEGHORNS, BLACK, BUFF** and **PARTRIDGE COCHINS.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

SMITH BROS., True Girt Poultry Yards. Berea, Ohio. For sale Mammoth L. Brahmas, Indian Games, R. C. B. Leghorns, Golden and Silver Laced Wyandottes and Barred Plymouth Rocks, also 150 Stags, Pullets and Cocks. Kentucky Dominicks and Irish Black Reds, Irish and Mexican Grays. Every bird warranted dead Game. Eggs in season.

CLEAR GRIT FOR POULTRY. Stamp for Sample. Etc. Orr's Mills Poultry Yards, Orr Mills, N. Y.

PINE TREE FARM, Jamesburg, N. J. W. H. ORDWAY, Prop., D. A. MOUNT, Supt. Mammoth, Pekin and Rouen Ducks, W. Turkeys, W. Guineas, Ind. Games, Lt. Brahmas, P. Rocks, Wyandottes, Blk. Minorcas, Leghorns, Geese and Pigeons. Eggs for incubators. Circular free.

BUFF and White Indian Games, the coming fowl, eggs $5.00 per 13, Buff, White and Br. Legs., Bu., Wh. and Bar. P. Rocks and Wyans., Langs., Lt. Brahs., Bl. and Wh. Mins., New York and World's Fair winners; eggs $2.00 per 15 or $3.00 per 26. Circular free. **LEWIS C. BEATTY, Washington, N. J.**

BARRED and White Plymouth Rocks exclusively, 8 yards finest and best in the world, large, healthy prize winning stock. **Eggs for hatching, $1.50 per 13, $2.50 per 26. COLCHESTER POULTRY YARDS. C. H. OTTIS, Proprietor, COLCHESTER, - - - - - CONN.**

1894 EGGS 1894 FOR HATCHING. B. C. and S. C. Br. and W. Legs., Bu. Cochs. a specialty. My stock is pure bred and the best I ever had. Eggs for hatching will be booked now at $1.50 per setting, money to be sent with order; no eggs sent C. O. D. **W. J. BURRESS**, P. O. Box 22, **Summerville, Pa.**

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other, also **Compound Thermostatic Bars.** Manufactured by **L. R. Oakes**, Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.**, by Geo. H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

POULTRY YARD SUPPLIES.

Wire Netting, Roofing Papers, Bone, Oyster Shells. Full line supplies. Send for Price List. **G. H. Brinton, Elwyn, Pa.**

BRONZE TURKEYS, INDIAN GAMES, White Wyandottes, Black Javas, Black Minorcas, Barred P. Rocks, Pekin Ducks. Eggs **fertile** and from strong stock, at $1.50 to $2.00 per set. Catalogue free. **R. W. DAVISON & CO., Glenola, N. J.**

SPRAY PUMPS for whitewashing hen houses, spraying fruit trees, washing buggies, etc. Every family should have one. Send for catalogue. Special terms to agents. **COLUMBIANA PUMP CO., No. 18 R. R. St., - Columbiana, O.** Have "Spray Pumps" Very Large.

Wyckoff's White Leghorns, America's Business Hen. This seasons breeding stock consists of the choicest specimens selected from over 1,000 carefully bred birds, and are unequalled for size, vigor, show and superior laying qualities. Eggs $2.00 per 15, $3.75 per 30, $5.00 per 45, $10.00 per 100. Illustrated and discriptive circular free. C. H. WYCKOFF, GROTON, N. Y.

A. P. ALLEN, Meadville, Pa. Pekin Ducks and S. C. W. Leghorns; 5 other varieties.

Do you want as fine B. Minorcas, W. Wyandottes, Bu., Bl., Br. Legs., Lt. Brahs., W. and B. P. R'ks, S. S. Hambs. as in country? If so send to J. T. Wallace, Del. Water Gap, Pa. Cir. free. Eggs $1 per 13, Buff $3.

FOR SALE, EGGS. Buff Cochin, Light Brahmas, B. and W. P. Rock, S. S. Hamburgs, Golden Wyandottes, per setting $1.00, two settings $1.75. Indian Games, per setting $1.25, two settings $2.25. Chas F. Penepacker, 322 Campbell St., Wil'msp't, Pa.

EGGS FOR HIGH-CLASS **BARRED PLYM ROCKS** SEND TO J. T. FRENCH $2.00 PER SETTING 838 SUSQUEHANNA ST. TOLEDO, O.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1 00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.00, postpaid. They make handsome and valuable books. Address **Poultry Keeper Co.**, Parkesburg, Pa

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS.** Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa.

MAPLE FARM DUCK YARDS. The Largest Duck Farm in America. Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices **JAMES RANKIN, South Easton, Mass.**

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Coun.

HAWKINS breeds America's best **PLYMOUTH ROCKS, Barred and White. WYANDOTTES, Silver and White.** More prizes awarded this strain than all others combined. Selected Breeding Birds that will produce winners. Finely illustrated catalogue of America's greatest poultry farm, free. Lock Box 4. **A. C. HAWKINS**, Lancaster, Mass.

Mammoth New Catalogue Almanac AND GUIDE TO POULTRY RAISERS. 64 large pages, printed in colors. Description of all leading varieties of fowls. Over 50 fine illustrations. Plans for Poultry houses. Remedies for all diseases. Recipe for Poultry Powders. The finest thing out—everybody wants one. Only 10c. **C. C. SHOEMAKER, Freeport, Ill., U. S. A.**

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,** 1011 Arch St., Philadelphia, Pa. 145 Grand St., New York. 36 East Madison St., Chicago. 627 Smithfield St., Pittsburg, Pa. 223 N. Howard St., Baltimore, Md. 170 W. 4th St., Cincinnati, O. **Oldest Homœopathic Pharmacy. Established in 1835.** *The Poultry Doctor*, 85 pp., 12mo, cloth, 50 cents.

BOOM THE LEADERS!

The two best poultry papers on earth are FARM POULTRY ..... 50 cts. and POULTRY KEEPER ..... 50 cts.

We will send **both**, for one year, for **only 70 cts.** **I. S. JOHNSON & CO., Boston, Mass.**

HATCH YOUR CHICKENS! Brood them with the IMPROVED JUNIATA INCUBATOR AND BROODER. The latest improved hatcher in the world. *Reliable, Perfect, Self Regulating.* Heated by a radiator. The most scientific incubator made. Guaranteed to hatch perfectly. KEARNS & ALEXANDER. Send 4c. for Catalogue. Yeagertown, Pa.

CAN be applied by any one on steep or flat roofs. Extra Heavy Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Caps and Nails. Sample and circular free. **A. F. SWAN,** 38 Dey St., N. Y.

ONLY $1.10! CANNOT BE EQUALED!

FARM POULTRY (Monthly)	**50cts**
POULTRY KEEPER (Monthly)	**50 "**
FARM and FIRESIDE (Semi-Monthly)	**50 "**
MODERN COOK BOOK	**50 "**
Total	**$2.00**

All sent postpaid on receipt by us of cash or stamps, **$1.10.** Sample papers free. Address **FARM POULTRY, Box F. P. BOSTON, MASS.**

The Imp'ed Monitor Incubator.

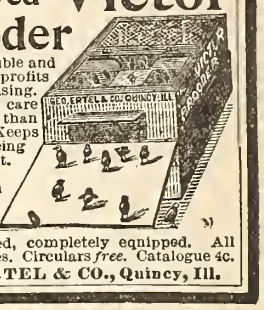
Two medals and two diploma awarded at the Great World's Fair on special points of excellence as follows: "Completeness of arrangement for securing uniform heat. Proper ventilation and moisture, with ease of operation." Send stamp for Cata. for special offer we will make you now. Address, **A. F. WILLIAMS, 18 Race St., Bristol, Ct.**

OUR CATALOGUE FREE **POULTRY SUPPLIES** HARVEY SEED CO. BUFFALO, N.Y.

LADIES!! Why Drink Poor Teas? THE GREAT AMERICAN TEA COMPANY. When you can get the **Best at Cargo prices** in any Quality Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums given to **Club Agents. Good Income** made by getting orders for our celebrated goods. For full particulars address THE GREAT AMERICAN TEA CO. P.O. Box 289. 31 and 33 Vesey St., N. Y.

WEBSTER & HANNUM GREEN BONE CUTTER CAZENOVIA, N.Y. ALWAYS ON TOP. CHEAP, DURABLE AND WARRANTED. AWARDED 1ST PREMIUM OVER CUTTERS COSTING DOUBLE AND MORE, AT GREAT INTERSTATE FAIR, ELMIRA, N.Y. N.Y. STATE FAIR, SYRACUSE, N.Y. AND 1ST AND 2ND PREMIUM AT WESTERN N.Y. FAIR, HELD AT ROCHESTER, N.Y. SEND FOR CIRCULAR

THE **Improved Victor Brooder**



Ends the trouble and increases the profits of poultry raising. Takes better care of the Chicks than a mother. Keeps them from being frozen or lost. Perfectly adapted for in or outdoor use. Glass covered, double decked, completely equipped. All sizes, all prices. Circulars *free.* Catalogue 4c. **GEO. ERTEL & CO., Quincy, Ill.**

Valuable Books Given for Securing New Subscribers at 50 Cents Each.

No. of Subs.		*Value*
1	Hile's Book on Incubation	$ 25
1	Practical Caponizing	25
1	Standard American Poultry Book	25
1	How We Made the Old Farm Pay	25
1	Index to any Volume of POULTRY KEEPER	10
1	Poultry for Profit	25
1	Incubators and Brooders	25
1	Management of Young Chicks	25
1	"Poultry Keeper Special for 1887,"	25
1	"Poultry Keeper Special for 1892,"	25
1	Kendall's Horse Book	25
1	Temperance Volume	25
2	Complete Poultry Book	25
2	Diseases of Poultry	25
2	Breeders Egg Record and Account Book	25
2	Five Hundred Questions Answered	25
2	How to Tell the Age of a Horse	35
2	All About Broilers and Market Poultry	25
2	A. B. C. of Strawberry Culture	40
2	American Corn Husker	50
2	Knitting and Crochet	50
2	Indian Game	20
2	Moisture Guage	20
2	Willis' Veterinary Practice	55
2	Chicken Marker	25
2	Practical Poultry Keeping	50
2	Natural and Artificial Duck Culture	50
2	Silos and Ensilage	50
2	Small Fruits and Poultry	30
2	Fisher's Grain Tables	30
2	How to Select Cows	50
2	Standard and Commercial Poultry Culture	1.00
3	Gentleman's Long Leather Pocket Book	75
4	Kidder's Secrets of Bee Keeping	75
4	Mrs Parker's Complete Housekeeper	1.00
4	How to be Your Own Lawyer	1.50
4	The People's Doctor	1.50
4	Everybody's Paint Book	1.50
5	Ladies' Home Journal	1.00
5	Compendium of Cookery	1.00
5	Affleck's Farmers Record and Acc't Book	3.55
6	A. B. C. of Bee Culture	1.20
6	American Standard of Excellence	1.00
6	Philosophy of Judging	1.00
6	Guenon's Milch Cows	1.00
10	Cruden's Unabridged Concordance	2.00
10	Polyopticon	2.50
12	Blakelee's Cyclopedia	3.00
12	Caponizing Set	3.00
12	Webster's Unabridged (Reprint) Dictionary, (full sheep bound)	2.50

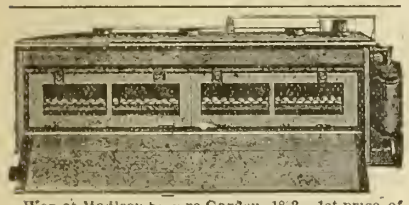
Eggs and Stock for Sale.—W. Wyandottes and S. C. W. Leghorns (Knapp Strain). Single setting $1; the above breeds crossed for brollers, $4 per 100. Hens all extra good layers. Eggs carefully packed in egg-boxes. Plenty of good references given. **B. H. NOXON,**
Elm St., Ithaca, N. Y.

LIKE WILL BEGET LIKE."

700 selected S. C. B Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. **At New York,** Feb. '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. *"Like did beget like,"* I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

THE IMPROVED
VICTOR
INCUBATOR
Successfully Hatches Chickens by Steam.

Absolutely Self-Regulating.
The Simplest, Most Reliable and Cheapest First-class HATCHER in the market.
Circulars Free. Catalogue 4 cents.
GEO. ERTEL & CO., QUINCY, ILL.



Won at Madison Square Garden, 1892. 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.
THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operation in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.
Jas. Rankin, South Easton, Mass.

"Everything For The Poultry Yard."
Poultry and Supplies
MOST COMPLETE STOCK IN AMERICA.
PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.
Our Breeds:-L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.
Do You Want Our Catalogue?
60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.
MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.

SIMPLEX HATCHER.

The Most Simple and Perfect Incubator Made.
Quick and certain; Hatches every egg that a hen could hatch; Regulates itself automatically; Reduces the cost of poultry raising to a minimum.
Best in every way—lowest in price.
Send for Illustrated Catalogue.
SIMPLEX HATCHER CO., Quincy, Ill.

KNAPP BROS.

WHITE LEGHORNS, WHITE WYANDOTTES AND PEKIN DUCKS, AT THE WORLD'S COLUMBIAN EXPOSITION, were awarded **Highest Honors;** 20 birds, 11 entries, **7 first, 3 second and 1 third Prize. First on Breeding Pen of White Leghorns. First on Breeding Pen of White Wyandottes, HIGHEST SCORING BIRD AND BREEDING PEN** on exhibition in **any variety,** an average of 95 points on our entire exhibit. Our usual **sweeping record** on these two popular varieties at the **WORLD'S FAIR.** Two of the **first prize birds** not in our exhibit are now in our yards. Our breeding pens, next season, will contain these prize winners. **Every first prize,** with one exception, and **five of the second prizes at N. Y. State Fair,** Sept. 14th to 21st. The **records** will tell **who** won the **prizes** at the **late N. Y. Show** and at **32 of America's leading shows** during the past 11 years. **TWO HUNDRED** selected early hatched **COCKERELS, Trios or Breeding Pens** and **FINEST PEKIN DUCKS** at low prices for quality. Satisfaction guaranteed.
We also offer R. C. White Leghorns direct from R. R. Knapp's prize winning strain—four **1st** and one **2d** prize at **World's Fair.** Send stamp for **new, illustrated** catalogue, giving **highest prize record** ever won by **any** breeder of **any** variety. Address
KNAPP BROTHERS,
BOX 501, FABIUS, N. Y.

Leghorns and Beagles. R. C. W. and Brown and S. C. Brown and Buff Leghorns and S. S. Hamburgs. 6 Beagles, 5 mos., from Reg. stock, for sale.
H. J. BROWN, Harford, Cort Co., N. Y.

HIGHEST AWARD WORLD'S FAIR 3 MEDALS 3 DIPLOMAS
INCUBATOR ON TRIAL
NOT A CENT UNTIL AFTER YOU HAVE TRIED IT
STAMP FOR CATALOGUE
BOOK INCUBATION 5 CTS. SET PLANS BROODER HOUSES & C 25 CENTS
VON CULIN INC. CO DELAWARE CITY, DEL

A SPLENDID OPPORTUNITY
TO OBTAIN A
High Class Religious Weekly Paper.
SABBATH -:- READING.
A SIXTEEN-PAGE PAPER,
NO POLITICS,
NO SECTARIANISM,
NO SECULAR NEW
Nothing but the BEST READING for Sunday
Live Reports of City Missions, showing what is being done in New York among the degraded and outcasts of both sexes; how they are invited to meetings, how they become converted, their testimonies for Christ, etc., etc.
Sermons. Sunday-School Lesson. Treatment of the current Christian Endeavor Topic, Mothers' Afternoon with the Children and other most interesting Sunday reading.
The publishers of THE POULTRY KEEPER have made arrangements whereby the following unprecedented offer can be made:
TO ALL WHO SEND US
75 CENTS
we will send the POULTRY KEEPER for a year, and will also send
SABBATH READING
For a whole year
postpaid, absolutely free.
This is a grand opportunity to secure, free of all cost for a year, one of the best religious weekly papers published. Just think, a 16-page paper, stitched and trimmed, 52 weeks. Send to us for a free sample copy of *Sabbath Reading.*
POULTRY KEEPER CO.,
Parkesburg, Pa.

MONEY SAVED!

☞Order your periodicals of us, and save money. Look at this list, and see that you get in many instances two papers for less than the price of one.

	Publisher's Price.	Price with our paper included.	Our Price Alone.
Amateur Sportsman, N. Y.	$1 00	$1 05	$ 85
American Agriculturist	1 50	1 65	1 35
" Bee Journal, Chicago	1 00	1 45	95
" Farmer, Springfield	50	85	45
" Poultry Advocate	75	65	20
" Stock-Keeper	1 00	1 35	90
Art Amateur	4 00	3 95	3 60
Arthur's Home Magazine	1 00	1 20	85
Babyland	50	*85	45
Breeders' Gazette	2 00	2 25	1 85
Century	4 00	4 05	3 75
Chicago Weekly Inter-Ocean	1 00	1 40	95
Christian Herald	1 50	1 70	1 30
City and Country	50	80	45
Cosmopolitan	1 50	1 85	1 45
Cultivator and Country Gentleman	2 50	2 40	2 00
Demorest's Monthly Magazine	2 00	2 15	1 75
Detroit Free Press	1 00	1 45	95
Dog Fancier	50	80	45
Fanciers' Monthly	1 00	1 25	90
Fanciers' Review	35	65	30
Farm and Fireside	50	95	45
Farm and Home	50	80	45
Farm Journal	50	70	40
Farm Poultry	50	70	40
Farmer's Review	1 25	1 60	1 15
Frank Leslie's Ill. Newspaper	4 00	4 00	
" Popular Monthly	3 00	3 00	
Game Breeder	95	1 20	80
Game Fanciers' Journal	50	80	45
Game Fowl Monthly	1 00	1 10	75
Geflugel Zuchter	50	85	40
Godey's Magazine	3 00	3 30	2 90
Golden Days	3 00	2 95	2 60
Harper's Bazaar	4 00	3 90	3 60
" Monthly	4 00	3 90	3 60
" Weekly	4 00	3 90	3 60
" Young People	2 00	2 20	1 85
Home Queen	50	70	40
Horseman, Chicago	4 00	3 85	3 60
Household	1 10	1 30	90
Housekeeper, (Minn)	1 00	1 25	90
Lippincott's Magazine	3 00	3 00	2 60
Ladies' Home Journal	1 00	1 30	90
Michigan Poultry Breeder	50	75	45
National Stockman and Farmer	1 50	1 70	1 35
New England Fancier	50	75	45
New York Tribune, weekly	1 00	1 25	95
" World, weekly	1 00	1 40	75
Our Little Ones	1 50	1 60	1 25
Peterson's Ladies' Magazine	2 00	2 00	1 70
Philadelphia Weekly Press	1 00	1 40	95
Philadelphia Weekly Times	1 00	1 40	95
Phrenological Journal	1 50	1 60	1 25
Poultry Bulletin	50	85	45
Poultry Chum	25	60	25
Poultry Journal, (American)	1 00	1 00	75
Poultry Journal, (Ohio)	1 00	1 00	75
Poultry Herald	50	80	45
Poultry Monthly	1 00	1 25	90
Poultry Topics	25	60	20
Poultry World	1 25	1 30	1 00
Poultry Yard, (American)	1 50	1 70	1 35
Practical Dairyman	50	70	40
Practical Farmer, Philadelphia	1 00	1 2	90
Practical Poultryman	40	85	45
Prairie Farmer	1 00	1 30	90
Presbyterian Journal	2 00	2 10	1 75
Scientific American	3 00	3 20	2 85
Southern Fancier	50	90	45
The Fancier (Pigeon)	1 0	1 20	85
Toledo Blade	1 00	1 40	90
Vick's Monthly Magazine	50	75	40
Western Poultry Breeder	25	60	15
Western Poultry Journal	50	70	4
Wide Awake	2 40	2 60	2
Youth's Companion, new subs only)	1 75	1 80	
Youth's Companion, (renewals)	1 85	2 30	0

BONE AND SHELL
FOR POULTRY.
Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The lime or oyster shells furnishes shell material. The *granulated* size is for *adult* fowls; the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs. or more delivered, freight paid at your railroad station, address
FITCH FERTILIZER WORKS, BAY CITY, MICH.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings.
REDUCED PRICES FOR ROLLS 150 FEET LONG.

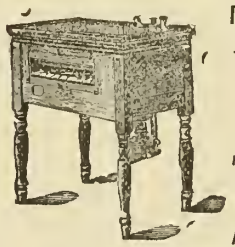
	12	18	24	30	36	42	48	60	72 inch.	
2 Inch No. 19.	.75	$1.15	$1.50	$1.90	$2.25	$2.65	$3.00	$3.75	$4.50	Per Roll.
1 Inch No. 20.	$1.75	$2.75	$3.50	$4.50	$5.25	$6.25	$7.00	$8.75	$10.50	Per Roll.

Discount 5 rolls 5 per cent, 10 rolls 10 per cent. ⅞ inch Galvanized Staples, 10 cents per pound.
PETER DURYEE & CO., 215 Greenwich St., N. Y.
SPECIAL NOTICE.—Write for freight allowance on five or more rolls, and price list of other styles Wire Fencing.

SUCCESSFUL POULTRYMEN
ARE MEN WHO THINK.
They will not be 5 hours doing 1 hour's work, therefore they always use
MANN'S BONE CUTTERS.
Best, cheapest, reliable, and warranted. Price, $10 and upwards. Thousands in use. 55 Medals and Premiums received. Never yet lost a premium in honest competition.
NOTHING ON EARTH
WILL MAKE HENS LAY
Like green cut bone. Illustrated catalogue free, if you name this paper.
F. W. MANN COMPANY, MILFORD, MASS, U. S. A.

First at New York.
LILLIAN RUSSELL

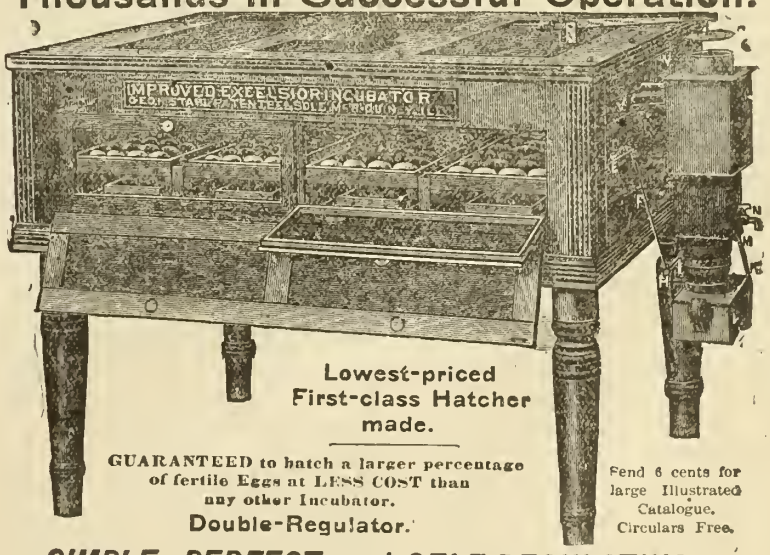
SHARP'S AGITATOR STRAIN OF IND. GAMES,
Bred Especially for Utility,
Will Make You Money in Hard Times.
White Indian Games we originated. We breed the finest Red Caps, Buff Ply. Rocks, Golden Wyandottes, Creve Coners, S. C. White Leghorns, Black Minorcas and Aseels that are produced in America.
For particulars, write for catalogue illustrating America's greatest thoroughbred Poultry Farm.
Stock and eggs for sale. Our stock wins at the World's greatest Shows.
C. A. SHARP & CO., Lockport, N. Y.



The Prairie State Incubators and Brooders,
Are Endorsed by P. H. Jacobs.
94 FIRST PREMIUMS 94.
Hundreds of our Customers Use from 10 to 30 Machines.
Do not buy an Incubator or Brooder until you send for our **104 page Catalogue giving full particulars.**
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
HOMER CITY, PENNA.

How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.
It is acknowledged to be **"The Best Poultry Magazine Published"** in the world.
Send for **Index** to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. **Subscriptions can begin** with **any** back number you desire.
Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? **Do you care to learn** how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. **"What has been done, can be done again."** Remember the price; 50 cts. one year; six months 25 cts; sample **free.** Remit cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

HATCH CHICKENS BY STEAM.
THE IMPROVED
EXCELSIOR INCUBATOR
WILL DO IT.
Thousands in Successful Operation.



Lowest-priced First-class Hatcher made.
GUARANTEED to hatch a larger percentage of fertile Eggs at LESS COST than any other Incubator.
Double-Regulator.
Send 6 cents for large Illustrated Catalogue. Circulars Free.
SIMPLE, PERFECT, and SELF-REGULATING.
GEO. H. STAHL, QUINCY, ILL.
PATENTEE AND SOLE MANUFACTURER.

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Eggs for Hatching.—How long after the hens are selected and mated are the eggs fertile and suitable for hatching?—R.G. P., Alabama, N. Y.

It is claimed that ten days is the proper period, but it depends on a great many conditions. A month is not too long.

Poultry on the Pacific Coast.—Can poultry be raised successfully on the Pacific coast, and, if so, which kinds are used?—C. C. D., Missouri Valley, Iowa.

Poultry is a leading pursuit on the Pacific coast, all the breeds being used, though a large proportion of the poultry and eggs are brought from the East.

Preventive of Roup.—What is best to use as a preventive of roup by adding it to the drinking water.

There is no preventive of roup that is sure. Dissolve an ounce of permangenate of potash in a quart of water, and add one teaspoonful of the solution to each quart of the drinking water.

Brown Leghorns for Breeding.—1. I have some Brown Leghorns, hatched last May, which began laying in November. Will they answer as well to raise chicks from, next spring, as the two year old hens? They are of good size and healthy. 2. What is charcoal good for? 3. My hens moulted late. Is this due to age or to something wrong?—L. P. D., Aurora, Ill.

1. If they were hatched in May they are now fully matured for Brown Leghorns, and will produce strong chicks, though we always prefer hens for breeding purposes. 2. It is simply a corrective, and answers no valuable purpose otherwise. 3. Hens moult later every year as they become older.

Ruta Bagas, Beets, Etc.—Are ruta bagas, carrots, beets and parsnips suitable for poultry?—S. L., Maple Park, Ill.

All such foods (potatoes included) are excellent. Cook them and add ground grain or bran. If more of the succulent foods were given the hens would keep in better laying condition.

Langshans.—Are the Black Langshans as hardy as the Light Brahmas and Plymouth Rocks, and are they equal as layers or for market?—S. B. M., Falconer, N. Y.

The Black Langshan is unexcelled as a market fowl, so far as quality of flesh is concerned, and it equals the Brahma and Plymouth Rock as layers, and is also fully as hardy. What are known as White Langshans, however, we regard as delicate and undesirable.

Brooder for Ducks.—How large should a brooder be to accommodate forty young ducks? To what age can they be kept in the brooder, and what degree of heat?—J. R. L., Centreport, Pa.

Such a brooder should be about one yard square, or larger. Ducklings grow very rapidly, and after two or three weeks will thrive in a warm room, much depending on the weather. The heat for the first week should be about ninety degrees, gradually lowering until the ducks are feathered.

Droppings and Plaster.—In the mixture of plaster with the droppings from the hens what proportion of plaster is the proper amount?—A. K. G., Nichols, Ct.

One peck of plaster should be well mixed with a bushel of dry dirt. The plaster and dirt is then mixed with one bushel of droppings. We do not approve of the dry method of keeping droppings, however.

Black Minorcas.—Are Black Minorca males entirely black, or do they have red feathers on their necks?—R. P., Emporia, Kan.

They should be entirely black, and freed from feathers of any other color.

Leghorns and Minorcas.—What is the difference between the Black Leghorn and the Black Minorca?—G. D. S., Danbury, Ct.

The Minorca is about two pounds heavier and has a much larger comb, with dark legs. The Black Leghorn has five (or six) points to the comb, with yellowish dark legs. They differ also in general appearance.

Screen for Gravel.—Can you inform me what size screen to procure to screen gravel of the proper size for poultry.—G. W. B., Montesano, Wash.

A screen that will permit gravel the size of pop corn to pass through should answer. Grit should be sharp, as round gravel will not answer.

The Combs Turn Black.—What is the disease when the comb turns black at the top and spreads until it reaches the head, the fowl being drowsy, sitting all day for two or three days, and dies?—E. B. R., Brook Haven, N. Y.

The black comb is not a disease, but indicates that something is wrong, as the comb loses its red color whenever the bird is sick. The above may be caused by frozen comb, or it may be due to the large grey lice on the skin of the heads and neck. Mix one part spirits turpentine and two parts crude petroleum, and anoint face, comb and head, once a day.

Descriptions.—What kind and sizes are the Minorcas, White Wonders, and Hamburgs?—G. W. B., Camden, Ark.

There are two varieties of Minorcas—White and Black. The cock should weigh eight pounds. The White Wonders are white. The cock should weigh ten pounds. The Hamburgs are small, six pounds being about the weight of the cock. There are six varieties—Black, White, Silver Spangled, Golden Spangled, Silver Penciled and Golden Penciled.

Eggs or Poultry—Taxes.—1. Would it be advisable to use one breed for eggs and one for market, or keep one breed only and make a specialty of eggs or broilers only? 2. I have heard that poultry in California was taxed $5 per dozen; is it true?—W. H., Chicago, Ill.

1. We believe it better to begin with one breed, and for eggs only, and then enlarge according to the conditions and circumstances. 2. We are unable to answer, but believe such is not the case, as a tax of that amount would be exorbitant and prohibitory.

Bone.—1. Is bone meal as good for laying hens as green cut bone. 2. Do the green bone cutters cut bone fine enough for very young chicks? 3. What do the abbreviations "S. C." and "R. C." placed before Leghorns mean?—R. A. S., Scotia, Neb.

1. Green bone is more digestible and contains more nitrogen. 2. Some of the bone will be fine enough for chicks, but it depends on the kind of bone, as some will cut better and finer than other kinds. 3. They mean "Single-comb" and "Rose-comb."

How Much Cut Bone.—How much cut bone shall I give my flock of eighteen hens? I feed oats and buckwheat?—O. N. C., Brockton, Mass.

About one pound per day. Reduce the oats and buckwheat proportionately to the amount of bone allowed. There is no fixed allowance of bone for a hen, as hens differ, but the rule is one ounce of green bone per day for each hen.

Imperial Pekin Ducks.—Will you kindly inform me why some Pekin ducks are known as "Imperial" Pekin and some as "Royal" Pekin.—A. B. H., Kirwin, Kan.

There is but one kind of Pekin ducks. The terms "Imperial" and "Royal" signify nothing, and are useless.

Leg Weakness in Chicks.—My chicks in the brooder thrive well until they are about a month old, when they get weak in the legs, and I find them dead every morning, although they appear to have good appetites just before going under the roost.—A. B., Baltimore, Md.

The leg weakness may be caused by too much heat on the floor. During the night the chicks may change positions, and those that are weak in the legs, being unable to get out of the way quickly, are trampled to death. Use cut hay or straw on the floor, and divide the chicks by partitioning the brooder at night, removing the partitions in the morning.

SOMETHING ABOUT FOODS.

Balancing the ration is now the object in feeding. We will endeavor to explain what it means. Col. T. D. Curtis, in *Hoard's Dairyman*, has arranged some tables, to which we will refer.

Bear in mind that some foods are *heat and fat* producing, which are known as *carbonaceous*. The foods that produce lean meat, milk and the white of eggs are known as *nitrogenous*. The nitrogenous foods are also known as albuminoids and proteins. Their base is nitrogen, which comprises about four-fifths of our atmosphere, and is the destructive agent in all explosive compounds, as nitroglycerin, gun-cotton, dynamite, gunpowder, etc. It is nearly pure in the white of egg and in the virus of the rattlesnake, and predominates in albumen, gluten, gelatin, fibrin, casein, and all the proteins, both vegetable and animal. The following shows the nitrogenous foods. The expression "skimmed milk, 1 to 1.9," means one part of nitrogenous matter to one and nine-tenths carbonaceous matter." The carbonaceous material *always* predominates, but varies according to the kind of foods. The highly *nitrogenous foods* are as follows:

Skimmed milk	1 to 1.9
Buttermilk	1 to 2.6
Cotton-seed cake	1 to 1.8
Linseed cake	1 to 2.0
Rape cake	1 to 1.7
Malt sprouts	1 to 2.2
Brewers' grains	1 to 3.0
Sunflower seeds	1 to 1.3
Hempseed cake	1 to 1.5
Peas	1 to 2.9
Red clover before bloom	1 to 3.8
Pasture clover (young)	1 to 2.5
Rich pasture grass	1 to 3.6
Lucerne before bloom	1 to 2.3
Field beans in bloom	1 to 2.3
Flaxseed	1 to 3.1
Pea-meal	1 to 3.0

These foods are too rich in nitrogen and should be balanced with more carbonaceous ones, or else they will injure the animal or go to waste. The nitrogenous element makes muscle, or lean meat and casein, white of egg, or cheese. These foods are the more expensive and difficult to obtain. Hence they are seldom overfed. It has been clearly shown that the fats in milk do not come from the carbonaceous foods, but from a proper combination of these with the nitrogenous foods. These concentrated foods should be fed with care and caution. The aim should be to give both classes of foods. The wise farmer will grow a variety of the two classes of foods to supply the needs of his stock. It will pay, not only as a gratification to his animals and birds, but as true economy. The science of feeding is one of the most important that can engage the attention of the farmer or stock raiser.

The *carbonaceous* foods, or carbohydrates are the heat and fat producing foods. Their base is carbon, which comprises about four ten-thousandths parts of our atmosphere, in the form of carbonic acid gas, a combination of carbon and oxygen, which is the deadly damp of wells, but the life of soda water. It is harmless to drink, but deadly to breathe. It predominates in the diamond, coal, wood, fiber, starch, sugar, oil, resin, etc. These are called "foods of respiration." The following are the foods which have an excess of carbonaceous matter, cream having over thirty times as much carbonaceous material as of nitrogenous:

Cream	1 to 30.5
Oat bran	1 to 9.7
Corn bran	1 to 10.3
Wheat middlings	1 to 6.9
Pumpkins	1 to 18.4
Buckwheat grain	1 to 7.4
Corn	1 to 8.6
Oats	1 to 6.1
Barley	1 to 7.9
Rye	1 to 7.0
Carrots	1 to 9.3
Sugar-beets	1 to 17 0
Rutabagas	1 to 8 3
Artichokes	1 to 8.3
Potatoes	1 to 10.6
Barley chaff	1 to 30.4
Oat chaff	1 to 33 8
Rye chaff	1 to 32.6
Wheat chaff	1 to 24.1
Seed clover	1 to 7.4
Corn stalks	1 to 34.4
Oat straw	1 to 29.9
Winter barley straw	1 to 40.5
Winter rye straw	1 to 52.0
Winter wheat straw	1 to 45 8
Ensilage	1 to 12.0
Sorghum	1 to 7.4
Fodder oats	1 to 7.2
Green corn (German)	1 to 8.9
Hungarian grass	1 to 7.1
Italian rye grass	1 to 6.3
Fodder rye	1 to 7.2
Blue-grass in bloom	1 to 7.5
Timothy	1 to 8.1
Orchard-grass in bloom	1 to 6.5
Meadow hay, medium	1 to 8.0
Corn-cobs	1 to 71.2
Apples and pears	1 to 43.0

If the birds or animals are not fed other and more nitrogenous foods than the above they will gorge themselves to discomfort, and still crave the nitrogenous elements which these foods lack. They are only heat and fat producing. Animals exposed to cold need more of these than if kept warm.

A proper food is one. The proper balance of these two foods is as one part of the nitrogenous to five or six parts of the carbonaceous. The German expression of it is 1 to 5.4. It is called the nutritive ratio, and represents the proportion of the nitrogenous elements to the carbonaceous. The ration for each 1,000 pounds of live weight is twenty-four pounds of dry food, of which fifteen pounds must be digestible, and 2.5 pounds of this must nitrogenous, or the equivalent of this. Dr. Wolff says thirty pounds of young clover hay for an animal weighing 1,000 pounds is about such an equivalent.

The following foods are nearly *balanced*, and are composed of about the proper proportions of the nitrogenous and carbonaceous materials, the nitrogenous proportion, as stated, being in the first row of figures and the carbonaceous in the second:

Cow's milk	1 to 4.4
Barley middlings	1 to 6.0
Buckwheat bran	1 to 4.1
Barley bran	1 to 4.5
Rye bran	1 to 5.3
Coarse wheat bran	1 to 5.6
Cotton-seed	1 to 4.6
Millet	1 to 5.4
Wheat	1 to 5.8
Turnips	1 to 5.8
Fermented red clover	1 to 4.1
Fermented beet leaves	1 to 4.0
Rutabaga leaves	1 to 3.9
Fodder cabbage	1 to 5.2
Buckwheat in blossom	1 to 5.1
White clover "	1 to 4.2
Red clover "	1 to 5.7
Redtop	1 to 5.4
White clover, medium	1 to 5.0
Alsike (Swedish clover)	1 to 4.9
Red clover, medium	1 to 5.9
Quack grass	1 to 5.2
Red clover in bloom	1 to 5.7

As the waste of the system and the degree of production of eggs, is not always "balanced," however, there is a variation; hence the food should be varied also, the preference being shown by the hens, which will begin to reject certain foods and select another. That is a matter which should not be overlooked. *Test your hens* with different foods, and watch them closely, so as to observe which they prefer, as they will be guided by their appetites. The condensed foods (such as grain) must have bulky foods fed them to extend the stomach and keep its contents loose, so that the gastric-juice may act on and digest them more easily. When the nitrogenous and carbonaceous elements are not properly balanced there is waste. True economy consists in balancing the ration and feeding what the birds will eat up clean. These foods may be balanced by feeding them alternately as well as in combination. It is foolish waste to feed all grain when clover hay, cut fine, and scalded, may be given with the grain, and if lean meat is necessary to induce the hens to lay, then the meat is the cheapest food that can be used, as no food is cheap if the hens are not giving eggs in return. The lime and mineral matter also exists in foods, in a soluble condition, but if lime must be given it can be done by allowing cut bones to the fowls.

FEEDING HARD-BOILED EGGS.

Formerly it was a frequent recommendation that hard-boiled eggs be fed to chicks, and in fact it is excellent, but the difficulty is that such food is given to excess, causing the chicks to have bowel disease. For very young chicks a hard-boiled egg chopped fine and fed once a day with any other food that the chicks will eat will do them no injury, but prove highly beneficial. Another excellent mode of feeding an egg to chicks is to beat it, add a gill of fresh milk, thicken with cornmeal and feed on clean boards. The raw egg will be found nutritious and invigorating to weak chicks, and the mess will be relished. The corn meal dough should be stiff, and in no manner wet and soft.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks (Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and ten cents.

SELF BINDERS.—We have self binders, where by each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers. Price sixty cents, postpaid.

Vol. X. PARKESBURG, PA., MARCH. 1894. No 12

CONTENTS.

Poultry House for Small Flock—The King of Brooders—Five Hundred Hens—Roup and Cholera—The Kind of Floor—Our World's Fair Views—The Different Breeds. 177
Foods and Eggs. 178
Frauds—How to Feed Chicks—From North Dakota—Feather Pulling and Roup Cured. 179
Mill Feed—Points Out Reforms—Poultry in East Tennessee—How to Quickly Grow Shade Trees—Gasoline for Lice. 180
Rambling Thoughts—Doubling the Broods—Light Brahmas. 181
Errors of Feeding—Experiments in Operating an Incubator—Management of Poultry—He Feeds too Often. 182
Brief Remarks from Readers: Hens too Fat, Ducks and Feathers, Brown Leghorns as Layers, Has a Large Number, Roup, Will Keep 1,000 Fowls, Feeds too Much, Heavy Laying by Pullets, Roup and Bumble Foot, A Roup Remedy, Success with an Incubator, How he Cured Roup, A Lady's 400 Hens, Dry Food for Chicks, Plymouth Rocks and the Range, Houdans, The Record of one Hen, A Cholera Cure, What Three Turkeys Did, Egg Eating, Mr. McKinney's Meat Food, Hay and Bone—Is it Proper to Cross—Green Bone for Poultry. 183
Editorial Items—A Point for You—Mentionings. 184
New York Show—Eggs are Cash. 185
Caponizing Instruments. 186
Split Nut Feed Handle—A Bad Showing—Mr. Chalfant's Houdans—Are they Frauds? Books For Five Cents Each—One of Those Ailments. 187
Advertisements. 189
Advertisements. 190
Advertisements. 191
Bureau of Information—They Get Lots of Ventilation—Profit in Geese—The Sprague Commission Company—Pride in the Flocks—Publishers Department. 192

HE GETS NO EGGS.

A reader at Pomona, Cal., writes us in regard to cinders, and also says that he gets no eggs at any time. His method of management is given below, and the cause of non-laying is easily explained. He says:

"What do you think of cinders from the railroad track as feed? My fowls would eat three or four quarts a day if I would let them. What is the cause of my fowls not laying? I have kept poultry for eleven years, and for the past three years I have gotten scarcely *any* eggs at any time. I have eighty fowls, mostly Brown Leghorns. They have free range, and get plenty of grass, beets, pumpkins, with two pans of milk daily, as well as grit. In the morning they get two quarts of ground grain, wet with milk, about one pint of whole wheat, at night, and nearly every day some pounded bone. They are the picture of health, and free from lice. If I get hens from elsewhere they do no better. They have three different houses, and are comfortable.

The hens are overfed. There is no necessity for giving grain in a climate where grass is always plentiful. They eat the cinders as a corrective like charcoal, which is evidence that they require it in order to avoid indigestion. If our correspondent will turn his hens on the range to help themselves, and give no food for a month, then allow a light feed at night, he will find a difference. A mess of four pounds of ground fresh bone for the eighty hens is ample, but the first thing to do is to starve them down or make them work off the superfluous fat. If he will kill one he will find it literally clogged with fat, and almost unfit for the table.

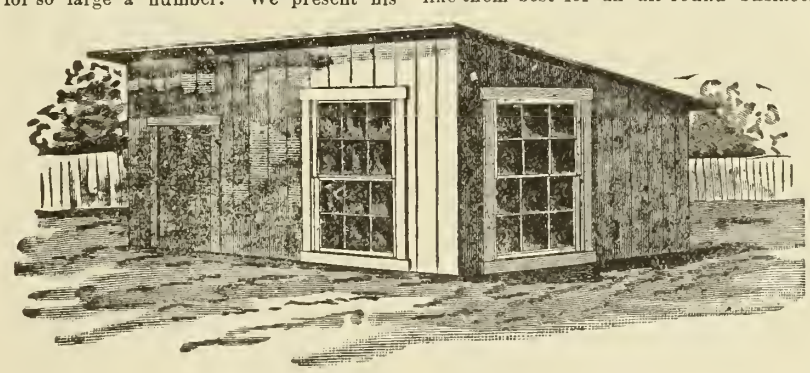
If any person finds this paragraph marked he will please understand that we send him the paper for examination, and trust that he will be sufficiently interested in poultry to invest the price of the paper for a year. If you are already a subscriber or receive more than one copy, it means we want you to hand them to poultry raisers.

POULTRY HOUSE FOR SMALL FLOCK.

The illustration of a poultry-house is intended to show several advantages. The house should be 10x15 feet, of any preferred height, and will comfortably accommodate twenty fowls. Having a flat roof it gives the most room at the least cost. The roof may be covered with tin or tarred paper. A window is at the east end and also on the south, which brings the sun's rays into the southeast portion of the house from sunrise until late in the day, while the other portions of the house are also favored with sunlight and heat during a portion of the day. The windows may be of ordinary house sash, and may be arranged so as to permit of being raised and lowered for ventilation. Such a well-lighted and warm house will be very attractive to the fowls, and its cost will be at a minimum compared with the many advantages possessed. The roosts and nests may be placed at the rear, or at the west end. The door is on the south side, in order to escape exposure to west and northwest winds.

THE KING OF BROODERS.

A subscriber at Blackstone, Mass., was very successful last season, and purposes to raise 2,000 chicks this year. He is solicitous in regard to the kind of brooder to use for so large a number. We present his letter for the purpose of comment. He says:



POULTRY HOUSE FOR SMALL FLOCK.

I would like the advice from you in regard to the following questions through the Poultry Keeper. Now, as I understand, but I may be wrong, that ducklings and broilers cannot be raised in the same brooder house, can they be raised together successfully or will they do best raised in different houses? Would you advise long brooder houses or small ones, if you wanted to raise from 2,000 to 3,000 chicks and about the same number of ducks every year, and as your trade increased would raise more? I have raised chicks with incubators and brooders one year and found it successful, and now I want to do it on a larger scale. We raised about 1,200 chicks last season with brooders in a small brooder house, 6x8 feet. The best we did was to raise 111 out of 115 placed in a Monitor Brooder, hot water, top heat, made by A. F. Williams, Bristol, Conn. Of course I took care of them and you have *got to* if you *raise chicks*.

The single brooders are excellent, and are the kind to use for beginners, but when large numbers are brooded it is an advantage to have a house under which the attendant and the chicks are sheltered, as broiler raising is a winter occupation. It is not out of place for us to state, however, that where one has used a brooder with such excellent success as above it is best to stick to it, as there is quite an advantage in understanding a method by experience. Certainly our subscriber did well last year, and we congratulate him.

FIVE HUNDRED HENS.

A big poultry farm, and a large broiler plant is owned by Messrs. C. M. Irish & Co., Lawrence, Mass, and we present a letter from them showing how they manage to keep fowls for profit and on the colony plan. They write us as follows:

Our farm contains nineteen acres, the most of it being devoted to poultry. We have five hundred laying hens, and generally have from five hundred to two thousand chickens, and have five hundred at the present time. Our brooder house is 110 feet long, heated with hot water pipes. We also have small brooders, to accommodate one thousand. They are the common lamp brooder put in small pens, six or eight feet square, and placed around on the colonizing plan, which makes fine, hardy chickens. Our breeding stock are in small pens, 8x15 feet, well separated, so as to give them free range. We started in ten years ago and have gradually worked up to the present number.

We keep Plymouth Rocks mostly, as we like them best for an all-round business hen. We never have shown any stock, as we are always too busy to attend to it properly. We aim for usefulness (that is $ $ $). Our stock has been highly praised by all who have seen it this year. They are at present laying fifty eggs to the one hundred hens, which we call good for mid-winter laying. We also have White and Brown Leghorns, Black Langshans, and White Wyandottes, but not in so large numbers as the Plymouth Rocks.

It will be noticed that they have been in the poultry business for ten years, hence they have no doubt paid well for their experience, and understand what they should do. They have pure breeds, and use their farm for poultry extensively, and there is no reason why the farmers should not include the poultry business as a part of the farming operations, instead of leaving it to the "women folks." The above letter shows what can be done on the farm.

ROUP AND CHOLERA.

Roup once in a flock will remain until the whole premises are disinfected. It is contagious and is often mistaken for cholera. Here are the symptoms of the scrofulous form, as given in a letter by a California reader:

What is the matter with our hens? We have had a considerable number die lately and these are the symptoms. They mope around, occasionally pecking at food, but not eating or drinking much. Combs are discolored, (dark), droppings yellow or greenish, breast bone sharp and thin. They sometimes mope for weeks, and sometimes die off quickly, but never recover when once we have noticed green droppings. They have no lice as far as we can tell, from a close examination. Some of our hens have free range and some are enclosed, (sixty out of the flock of 350), but it is the same with all. Lost ten or twelve in December and still some are dying this month.

Now, if the birds had *cholera* they would die in less than thirty-six hours or recover. There is no cure for such cases as the above except extermination. It is too much work to give them medicine, and the proper plan is to clean out the whole flock, disinfect the premises and begin with new and healthy stock.

THE KIND OF FLOOR.

Should the floor of the poultry house be of earth, boards, or cement, and what are the advantages and objections? First, an earth floor soon becomes saturated with filth, and the floor must be hauled away and fresh earth added. Boards are better than anything else, but rats will get under it and find a harboring place. Cement is excellent, but is *cold*. Probably a cement floor, kept covered with straw, will no doubt be suitable.

OUR WORLD'S FAIR VIEWS.

Although we offered fifty views of the World's Fair there are really fifty-five, which is less than one cent each for fifty cents. But we do more than that, for we offer you the Poultry Keeper one year, the *Farm and Fireside* (semi-monthly) one year and the fifty-five views—*all for fifty cents*. Now, if you can get as good a poultry paper, and as excellent a farm paper, with the addition of such *photographic* views, then we advise you to do so. We can't throw the moon in with the earth for fifty cents.

THE DIFFERENT BREEDS.

No breed can be relied upon as the *best*, or as being superior for *all purposes*, for something depends upon the objects desired, the mode of management, and the climate. A breed may be extolled by some and condemned by others. To attempt to find a general purpose fowl depends upon the *purposes*. A hen cannot lays eggs the entire year, for she is compelled to cease in order to molt, nor can she hatch a brood and lay at the same time. Hens of the large breeds require longer periods for growth than the small breeds, and do not mature as early. Consequently, while a breed may not be perfect, yet, by judicious crossing, *some* of the good qualities of several breeds may be united.

POULTRY FOR PROFIT.

This book is No. 1 of our series, and is intended as an answer to all the questions that can be asked, and is well illustrated with cuts. The price is only twenty-five cents, but to those who subscribe to the Poultry Keeper, and send sixty cents, we will send the book, and also the paper for one year.

FOODS AND EGGS.

Two Classes of Foods--Balanced Foods--How to Compound a Ration--Variation and Variety.

In our last issue we gave some invaluable tables on the proportions of nitrogen and carbon, written by that eminent scientist and editor, Col. T. D. Curtis. We present in this issue other valuable tables for reference, from the same high source, which appeared in the *Mirror and Farmer*, Manchester, N. H, which is the leading agricultural journal in New England. The tables were intended for guidance in feeding cattle, but as they apply so well for poultry and will serve to teach our readers about the value of foods, they are fully as welcome here.

There is no subject of greater importance in agriculture than that of feeding, whether it be feeding animals or feeding plants—and plants must be fed or there is nothing on which to feed animals or birds. Plants are fed only for growth and development; but animals may be fed for growth and development, for simply maintaining them without growth, for sustaining them at work, for laying on fat and for the production of beef and eggs and milk. This implies intelligent feeding for a specific purpose. But most feeding is unintelligent, haphazard, general-purpose feeding, without knowledge of the character of different foods, no matter what the desired purpose may be, or whether the foods given will effect the purpose. It is done as the old doctor is said to have administered medicine in cases which he did not understand. He had a big bowl into which he threw all kinds of little surplus doses of medicine, and it contained a little of everything known to materia medica. So when he encountered a case that he could not diagnose, he administered a dose from the bowl which he used as a catch-all, on the theory that there might be something in it that would fit the case. Of course his aim was to cure, though he stood quite as good a chance to kill. In the same way, most farmers feed their stock. They grow and save a variety of foods. Their desire is to sustain their animals and get the most out of them. So they dose them with all kinds of feed during the feeding season, on the theory that some of it must produce the desired result.

Foods are not only of various kinds, but are made up of various elements. It is found that these foods may, for practical purposes, be divided into two classes. Each class of foods contains most of the same elements, but in greatly varying proportions. But in practice it is found that we need to look after only *two* elements. When we have these in the right proportion to each other, we need not consider the others, as they are usually present in the right proportion and amount.

Foods containing a large proportion of one set of elements are called *nitrogenous*. They are also known as *albuminoids* and *proteins*, because these contain a comparatively large proportion of nitrogen—a gas very abundant in our atmosphere. But for our present purpose, in order to avoid confusing the memory, we will call this class of foods nitrogenous.

Another class of foods is known as *carbonaceous*. They are also known as *carbohydrates*, because they contain carbon and water; and they are known as *non-nitrogenous*, or without nitrogen, which is not quite true, however, but they contain a comparatively small proportion of it. They are also called foods of respiration. But we, on this occasion, will speak of them only as carbonaceous, because their leading element is carbon, which is also found in our atmosphere, but not so abundantly as nitrogen.

We clearly understand, now, that we are to consider two classes of foods. One we call nitrogenous. The other we call carbonaceous. Now what are the leading characteristics of these two classes of foods? What is it that so widely distinguishes them apart? Nitrogenous foods go to build up tissue, to make muscle and beef, to make eggs and milk, and especially cheese. Without nitrogenous foods there can be no growth, no development, no production of beef, milk and eggs. To some extent, nitrogenous foods are convertible into fat and heat, but they cannot be fed alone without great waste; and the more nitrogenous they are the more likely the animal is to become diseased and die. They are one-sided foods and need to be united with foods that make up the other side. You may have noticed that in this world most things go by pairs. What is one blade of the shears good for without the other? What would man be without woman? One sex cannot procreate without the other. There can be no production without the positive and negative forces. Nitrogenous foods may be said to contain positive forces, but they are powerless for results without the negative forces.

The carbonaceous foods contain these negative forces. Animals fed on these alone finally die of starvation. But unite the carbonaceous with the nitrogenous foods, and we have a complete whole. With the two, we can so balance the ration that there will be only a minimum of waste. While the nitrogenous elements mainly go to build up tissue and muscle and to produce milk and eggs, the carbonaceous foods supply heat to the system and lay on fat. They oxidize in the body, thereby generating heat, and,uniting with nitrogen, supply force, energy, motion and general activity. It is the business of science to find out just how to combine the two—the nitrogenous and the carbonaceous elements of food—so as to promote economy and secure the best results.

Bearing in mind these two classes of foods and their characteristics, the next thing is to distinguish them and tell to which class the several foods of the farm belong. We also want to know in what proportion to combine them for feeding purposes. Here we are compelled to refer to the feed tables of Europe and this country. Those of this country are based on the German standards and have the same mode of expression. The German daily ration for a milch cow, for every 1,000 pounds of live weight, is, of digestible material, 2.5 pounds of nitrogenous matter, 2.5 pounds of carbonaceous matter and 0.40 pound of fat.

The feeding ratio for milk is one pound, of nitrogenous matter to 5.4 pounds of carbonaceous It must be borne in mind that only the digestible portion of any food is available; and hence, in the feed tables, an average of the digestible portions of each food is given, and every feeder must judge for himself as to whether his foods are average, or above or below, in nutritive quality. Very much depends on the quality of the several foods used. Unless this is correctly estimated, the feeding ratio, however carefully the ration may be weighed out, is not likely to very closely approximate the correct standard.

We will not consider a few of the leading foods under three heads. 1st, those that are classed as nitrogenous; 2nd, those that are classed as carbonaceous; and 3rd those that may be considered fairly well balanced. Anything below 1:4.5 we will consider nitrogenous; anything above 1:6.0 we will call carbonaceous; and all having a feeding ratio between these figures we will class as balanced foods.

NITROGENOUS FOODS.

Hay.	Nitrogenous.	Carbonaceous.	Fat.	Ratio as 1 to
Japan clover	10.70	38.00	2.10	4.0
Cow pea vines	9.56	37.02	1.34	4.2
Cow pea	18.48	54.53	1.07	3.1
Soya bean	31.14	27.48	15.59	2.0
Brewers' grains wet	4.06	9.73	1.41	3.2
Brewers' grains,dry,	14.52	37.41	4.77	3.3
Malt sprouts	18.82	52.95	0.88	2.3
Cottonseed meal	35.75	22.25	11.65	1.4
Pasture grass	2.50	9.90	0.40	4.4
Red clover, extra	10.70	37.60	2.10	4.0
Lucerne, medium	9.40	28.30	1.00	3.3
Vetch hay	9.40	32.50	1.50	3.9
Pea hay, bloom	9.40	33.10	1.60	4.0
Lupine, medium	11.30	37.33	0.70	3.4
Pasture grass	2.50	9.90	0.40	4 4
Rich pasture grass	3.40	10.90	0.60	3.6
Pasture clover, y'ng	3.60	7.40	0.60	2.5
Red clover bef. blos.	2.30	7.40	0.50	3.8
White clover in blos.	2.20	7.90	0.50	4.2
Swedish clover beginning to blossom	2.10	5.80	0.40	3.2
Esparsette	2.10	8.00	0.30	4.1
Fodder peas, blos	2.20	7.40	0.30	3.7
Green rape	2.00	4.80	0.40	2.9
Carrot leaves	2.20	7.00	0.50	3.8
Fodder beet leaves	1.20	4.00	0.20	3.7
Rutabagas	1.50	5.10	0.30	3.9
Lupine silage	2.40	7.00	0.30	3.2
Beet leaf silage	2.00	6.30	0.70	4.0
Red clover silage	2 80	7.20	1.70	4.1
Peas	20.20	54 40	1.70	2.9
Field beans	23.00	50 20	1.40	2.3
Vetch	24.80	48.20	2.50	2.2
Lentil	21.40	51 20	2.20	2.6
Yellow lupine	34.40	41.80	4.90	1.6
Blue lupine	23.60	54.20	4.60	2.8
Cow pea, Am	19.40	49.60	1.10	2.7
Serradella	19.80	47.00	7.30	3.2
Chinese oil bean	34.50	28.30	18.10	2.1
Buckwheat bran	13.50	44 00	3.90	4 1
Pea meal	20.90	55.40	2.80	3.0
Hempseed cake	20.90	17.40	5.20	1.5
Walnut cake	31 10	28.20	11.20	1.8
Sunflower cake	31.30	24.70	7.60	1.3
Pumpkin seed cake	50.00	9.70	10.30	0.7
Rape cake	25.30	23.50	7.70	1.7
Rape meal, ex	26.50	27.20	2.40	1.3
Beechnut cake	13.50	22.20	6 60	2.8
Palmnut cake	10.00	16.10	9.50	4.9
Cottonseed meal,dec	33.20	17.60	8.00	1.1
Cottons'd meal,und.	17.50	14.90	5.50	1.7
Cow's milk	3.20	5.00	3.60	4.4
Skimmed milk	3.50	5.00	0.70	1.9
Buttermilk	3.00	5.40	1.00	2.6
Linseed cake	29.04	33.09	4.53	1.5
Linseed meal, o. p.	25.85	26.52	7.08	1.6
Linseed meal, n. p.	28.25	27.95	2.80	1.3
Rye bran	12.00	48.98	1.43	4.4
Wheat bran	11.72	44.66	2.58	4.4
Gluten meal	23.30	50.92	3.85	2.5
Buckwheat mid'ngs.	23.60	29.30	5.20	1.8

All these are not only strong foods, because containing a good deal of nitrogen or being very nitrogenous, but most of them are very concentrated and should be fed only with bulky foods that are carbonaceous. Not only is a proper proportion of carbonaceous elements required, but they must be bulky enough to properly and comfortably distend the stomach.

Let us next consider the fairly-balanced foods, such as have a feeding ratio of 5.5 to 6—that is, one part of nitrogenous elements to 5.5 and 6 parts of carbonaceous elements.

FAIRLY BALANCED FOODS.

	Nitrogenous.	Carbonaceous.	Fat.	Ratio as 1 to
Clover hay	7.82	40.25	1.49	5.6
Johnson grass	6.70	41.00	1.20	6.0
Rye fodder	1.51	8.20	0.26	5.8
Clover, green	2.70	12.78	0.44	5.0
Clover silage	2.20	10.98	0.65	5.7
Oat meal	11.20	50.15	5.79	5.6
Wheat middlings	11.60	48.87	2.68	4.7
Wheat shorts	10.79	44.80	2.85	4.7
Rice bran	9.97	48.66	3.61	5.7
Dried sugar meal	10.20	54.50	5.40	5.4
Oat feed	10.26	39.87	5.70	5.2
White clov.hay,med.	8.10	35.90	2.00	5.0
Alsike	8.60	34.80	1.80	4.6
Serradella, dry	8.50	36.20	2.80	5.1
Red top hay, blos	10.30	53.10	2.60	5.4
Wire grass,early blo.	10.20	52.70	4.00	4.5
Bermuda grass hay.	9.16	46.00	1.80	5.2
Quack grass	9.80	48.20	3.00	5.2
Ital. rye grass,green	2.30	12.60	0.40	5.9
Red clover,blos. gr'n	1.70	8.70	0.40	5.7
Trefoil	1.50	7.50	0.30	5.5
Saradella, green	1.90	8.90	0.70	5.6
Buckwheat blos.gr'n	1.50	6.60	0.40	5.1
Fodder cabbage	1.80	8.20	0.40	5.2
Turnips	1.10	6.10	0.10	5.8
Wheat, grain	11.70	64.30	1.20	5.8
Millet	9.50	45.00	2.60	5.4
Cottonseed	17.10	14.70	27.30	4.6
Coarse wheat bran	10.00	48.50	3.10	5.6
Rye bran	10.60	50.00	2.00	5.3
Pea meal bran	9.20	45.80	1.20	5.3
Barley bran	11.50	43.20	3.60	4.5
Distillery refuse	1.60	5.40	0.80	4.6
Wheat meal	10.80	54.80	2.90	5.7
Barley middlings	9.60	17.00	3.25	6.0

All these articles are sufficiently balanced, as between the nitrogenous and carbonaceous elements, but some of them need to be fed with bulkier foods. We next consider the

CARBONACEOUS FOODS.

Hay	Nitrogenous.	Carbonaceous.	Fat.	Ratio as 1 to
Meadow, med	5.40	41.00	1.00	8.0
Meadow, good	7.40	41.70	1.30	6.1
Rye fodder	6.60	44.30	1.30	7.2
Timothy	5.80	43.40	1.40	8.1
Early meadow	6.00	42.50	2.10	7.9
Orchard grass blos.	6.90	40.30	1.90	6.5
Sweet-scentedvernal	5.90	40.10	2.10	7.6
Blue grass, blos	5.90	40.00	1.60	7.5
Sheep fescue	8.80	57.10	3.60	6.9
Meadow foxtail	7.80	49.60	3.20	6.7
Fowl meadow grass	7.50	49.00	2.90	6.9
Wire grass, bloom	10.20	52.70	4.00	4.5
Barnyard grass	6.70	46.40	1.80	7.2
Italian rye grass	7.10	41.50	1.40	6.3
English rye grass	5.10	35.30	0.80	7.3
Hungarian grass	6.10	41.00	0.90	7.1
Green				
English rye grass	1.80	12.20	0.40	7.2
Timothy	2.10	16.00	0.50	8.2
Maize, Ger	1.00	8.40	0.20	8.9
Fodder rye	1 90	11.00	0.40	6.3
Fodder oats	1.30	8.90	0.20	7.2
Sorghum	1.60	11.90	0.30	7.4
Hungarian, blos	1.80	11.80	0.30	7.0
Cabbage stems	0.80	11.50	0.28	15.0
Corn silage	0.80	8.60	0.40	12.0
Potato top silage	1.20	6.20	1.30	8.0
Straws.				
Winter wheat	0.80	35.60	0.40	45.8
Winter rye	0.80	36.50	0.40	46.9
Winter barley	0.80	31.40	0.40	40.5
Summer barley	1.30	40.60	0.50	32.2
Oat	1.40	40.10	0.60	29.9
Fodder vetch	3.40	31.09	0.50	9.8
Pea	2.90	33.40	0.50	12.0
Field bean	5.00	35.20	0.50	7.3
Seed clover	4.20	28.50	1.00	7.4
Buckwheat	1.40	36.00	0.40	26.4
Corn stalks	1.10	37.00	0.30	34.4
Corn cobs	0.60	41.70	0.40	71.2
Roots, etc.				
Potatoes	2.10	21.80	0.20	10.6
Artichokes	2.00	16.80	0.20	8.7
Fodder beets	1.10	10.00	0.10	9.3
Sugar beets	1.00	16.70	0.10	17.0
Rutabagas	1.30	10.60	0.10	8.3
Carrots	1.40	12.50	0.20	9.3
Parsnips	1.60	11.20	0.20	7.3
Grains.				
Rye	9.90	65.40	1.60	7.0
Barley	8.00	58.90	1.70	7.9
Oats	9.00	43.30	4.70	6.1
Maize	8.40	60.60	4.80	8.6
Golden millet	7.20	47.00	3.10	7.5
Buckwheat	6.80	47.00	1.20	7.4
Sunflower seed	10.40	24.60	21.20	7.2
Palm seed	8.00	31.20	48.20	18.3
Acorns, fresh	2.00	30.90	1.50	18.2
Chestnuts, fresh	3.40	35.70	1.30	11.5
Apples and pears	0.30	12.90	.00	43.0
Pumpkins	0.40	7.10	0.10	18.4
Sugar beet cake	1.80	24.60	0.20	13.9
Corn bran	6.20	55.00	3.60	10.3
Corn sugar meal	3.20	19.30	1.80	7.4
Green malt sprouts.	5.20	36.90	1.20	7.7
Oat bran	5.60	49.80	2.00	9.7
Condensed milk	10.20	52.90	12.90	8.8
Whey	1.00	5.10	0.60	6.6
Cream	2.70	2.90	31.80	30.5

These foods must all be strengthened by the use in connection with them of other foods generally, but not always, more concentrated as well as nitrogenous. The tables show the *per cent.* of all the constituents, or the *number of parts in a hundred*, and the ratio column shows *how the ingredients are proportioned as to their nitrogenous and carbonaceous qualities.* Now the point is to so combine the different foods as to approximate a proper ration. With the extremely carbonaceous and bulky foods must be mixed enough of the concentrated and condensed nitrogenous foods to make a due balance of the two leading elements. Then if the ration is not large enough, more of the same kind may be added, or enough of the foods that are balanced, or nearly so, may be included to make up the desired amount. These can be added without disturbing the balance to any material extent. Indeed, as will be seen by the balanced table which I have given, the ration may be broadened and narrowed considerably; and this will always be done more or less by variations in the nutritive qualities of the foods, at which the common feeder can only guess. Hence it is fortunate that this variation of the ration does no particular harm.

Now let us make the above tables plain. They are based on *percentage*. That is, a proportion of 100. Looking at the top of the first column, under heading of "*nitrogenous foods*," we find that Japan clover has 10.70 per cent. of nitrogenous material, which means, in each 100 pounds, that it contains ten pounds and 70-100ths of a pound. If it was 10.75 we would say 10¾ pounds. It has 38.00 per cent. of carbonaceous material, which means 38 pounds exactly. It has 2.10 per cent. of fat, which makes two and one-tenth pounds. If we add the 38 pounds of carbonaceous material and the 2.10 pounds of fat, we will have 40.10 per cent. The *ratio* is given as 4.0, which means that the 40.10 pounds is *about* four times as much as the 10.70 pounds of nitrogenous matter. The tables are not strictly correct, but are sufficient for the purpose.

Bear in mind that when a hen is *laying* she is *producing* something, hence she requires a different food from a non-laying hen. The latter will become fat because she has only to eat sufficient food for her support, hence when you throw food to hens that contain layers and non-layers the very hens you desire to secure the proper food may be the ones that are kept back, or driven off by the others. Hence, always separate your laying hens from the others if possible.

We advise our readers to send for our October, 1891, POULTRY KEEPER, which also has eight columns on feeding for eggs, and contains many valuable tables. It is alone worth two years subscription.

SEND us money, money order, postal notes, or checks, if you can, but if inconvenient send *postage stamps*.

FRAUDS—HOW TO FEED CHICKS.

P. J. GRUBER, ST. CLOUD, MINNESOTA.

It has been almost two years since I last addressed a communication to you. My silence has not been caused by meeting with adverses in the poultry business, but rather by lack of time; nevertheless, I have been a constant, attentive and interested reader of the POULTRY KEEPER all this while.

I have acquired quite an amount of experience, not only in the manner of how to keep poultry for profit and pleasure, but also in having dealings with breeders.

There is in my judgment, supported by actual experience, an immense amount of fraud perpetrated in the poultry as well as in any other business. By looking over the advertisements which appear in our poultry journals, I keep only two of them, POULTRY KEEPER and *Farm Poultry*, one would actually think that there are no poor nor indifferent fowls of any breed in the market, neither are there any eggs from worthless and inbred stock for sale. Every advertiser claims to have the purest, the finest, the most perfect, and most prolific egg-producing stock; and whilst some breeders can lay just claims to fine and pure stock, there are hundreds of would-be breeders, whose cards appear conspicuously in our poultry journals the whole year around, that I consider nothing less than a farce, a fraud, and a stumbling block to success for the amateur or farmer that happens to be unfortunate enough to fall into the hands of such pirates, and these remarks are based on actual experience.

Some of such breeders that make such a great deal of noise in our journals will spot an amateur, or in other words a green horn, as soon as he makes an inquiry in regard to either stock or eggs. If an order is placed for eggs the amatuer stands a remarkably good chance that the Pharisee of a would-be breeder will ship him anything he sees fit, just so something alive will crawl out of *one* egg out of thirteen and be eventually covered with feathers.

This seems to be a pretty strong dose for some of our would-be breeders, but it is a fact, and they better take the medicine with grace. In the spring of 1892 I placed an order for one setting of Black Langshan eggs with breeders in Ohio, who have advertised, and are doing so to-day, very extensively, who issue a very neat catalogue, giving a sort of biographical sketch of their old cocks and hens of a variety of birds; therein they blow their own horn in great shape, propounding upon the purity, the grandeur, the symmetry, the profuse toe and shank feathering, the prolific and unexcelled laying qualities, the majestic carriage, etc., of their lordly Black Langshans. I had at that time, two years ago, already acquired sufficient knowledge of the poultry business so as not to be too sanguine in my expectations as to results, both in quality and quantity. I did not anticipate, nor expect to get more than five or six chicks from our setting of thirteen eggs, neither did I flatter myself to find any ninety-six points cockrels or ninety-four points pullets among them; but I had a right to expect more than one chick, and what is more, I had a right to expect that the chicks or rather the chick hatched, would at least bear the resemblance of a Black Langshan.

Well, the eggs arrived in good shape—they were permitted to settle in a cool place for two days before they were placed under a hen, fully confirmed in broodiness; the hen did her part of the work well, and all circumstances pointed towards a favorable hatch. On the twenty-first day two solitary chicks made their appearance, one of them died the first day; in vain I looked for more to follow—all the rest of the eggs proved infertile. I allowed old Biddy to rear the lonely chick all by itself, thinking that, be it cockerel or pullet, it might be the foundation for good stock and worth to me the price of the setting of eggs, $3.00.

It proved to be a cockerel, just what I wanted, but, to make the story short, I am ashamed to call it a Black Langshan. I permitted him to disgrace my yard till he had enough meat on his bones to go into the pot, where his pedigrees showed off to best advantage.

When notifying those honest (?) breeders of my success, never intending, nor in any way intimating, that I felt myself entitled to another setting, they answered me in a very short and abrupt letter, saying that they never duplicated settings in case of poor hatches, and proposed to sell me some fine young stock at very low prices.

No doubt the parties had *some* fine stock to sell in their immediate neighborhood, as without it they could not expect to do any business; but with parties living a long way off they probably resound thus: "We are going to make $3 out of that fellow away way up in Minnesota. It will be the first and last time any how that we probably expect to do business with him, and anything will be good enough for a beginner who does not know anything about pure-bred stock."

I paid them their own price, $3, for a setting of worthless eggs, from still more worthless stock.

While writing these lines I feel actually tempted to give here in large character the full name and address of those parties, and brand them as deliberate swindlers, premeditating whom they can defraud, as I am confident that the experiences of many that will remain untold are of the same nature as mine.

I did not yield to discouragement after meeting with the above described experience, but I purchased some more Black Langshan eggs, being determined to raise some stock, and get hold of a nice cockerel. I had then, and have now, two Black Langshan hens that are very fine, indeed, the true ideals of Black Langshans.

One setting I purchased from a breeder here in Minnesota, and another one from parties in Iowa, both parties claiming pure stock and advertising it as such. From these I got fairly good hatches, but the quality of stock was way below what it was represented to be and what it should have been. In shape they resembled more the clumsy appearance of Cochins. Their plumage was mixed with white, and some had even a sprinkling of gray—some had black shanks, others yellowish, no toe featherings, and they were, taking all in all, rather a sorrowful looking flock of Black Langshans, especially when comparing them with the requirements necessary to constitute a pure-bred Black Langshan according to the "Standard of profection."

Now, if a farmer, who is desirous to improving his flock by new and pure blood, meets with such treatment, and is humbugged as I have been been, need we be surprised to hear the old cry "Poultry does not pay" and "pure bred stock does not shell out more eggs than the common barnyard fowl?"

These facts furnish evidence not to be contradicted, that many of our breeders who advertise pure bred stock are very unreliable, to say the least; they are mere frauds, and I would sum up the situation from my point of view as follows:

First. These imposters are the worst stumbling blocks to success for the farmer and for the amatuer, because they, being imposed on with worthless stock which will ultimately lead to thorough disgust, will never know the beauty and utility of pure bred stock unless they should keep on trying till finally they happen to strike an honest breeder.

Second. These unprincipled, would-be breeders are doing a great injustice to the honest and honorable breeder who spends time and capital in a legitimate business, striving and experimenting to obtain and furnish their patrons the best that can be obtained, because, a person having been imposed on once will naturally be suspicious of others in the same business, although they may be beyond suspicion and be men of honor and integrity.

Third. Any would-be breeder that acts the Shylock ought to be publicly denounced as such. Brake him up, get him out of the way; there are enough of honest and honorable breeders that will sell you honest eggs and honest stock. For my part I shall publicly denounce the first man who shall endeavor in the future to beat me. I will not kick against a *poor* hatch, say one or two chicks out of one setting, but I shall kick most vigorously against a *full* hatch of worthless chickens, which have been represented to me as pure bred.

But honor to whom honor is due. Please allow me to express my appreciation of the dealings I have had with Mr. Willard Knapp of Fabius, N. Y. I ordered of him one setting of Black Minorca eggs, in the spring of 1892, having had at that time an unusually cold and wet spring. The eggs must have gotten chilled while in transit, as only one chick was hatched, which however proved to be a cockerel, developing into a very handsome bird, worth to me the price of at least two settings.

I notified Mr. Knapp of the poor hatch, stating that on account of the lateness of season I would defer the purchase of another setting to next spring (1893), but behold, about two weeks later, I received another setting (fifteen eggs) from Mr. Knapp *gratis* which was on my part wholly unexpected as well as unasked for.

From this setting thirteen chicks were hatched, four cockerels and nine pullets. I lost none and they were a pleasure to behold, proving to be all that Mr. Knapp represented them to be.

In the spring of 1892 I mated a pure bred White Crested White Polish cockerel with my two Black Langshan hens, and the pullets from that cross proved to be the most prolific layers I ever had, none excepted.

My hens hatched 110 chicks in the season of 1892, of which not one was lost. I raised every one. Last season the hatches amounted to ninety-six chicks, of which only one I lost, it being killed by the old hen.

I would call this very good success, and every one can obtain the same results, provided the young stock is treated properly. As it may be of interest to some readers I will state how I feed.

For the first week I feed three times a day on hard boiled eggs, mixed thoroughly with bread crumbs and cracker crumbs. This I do by placing the hot egg, shell and all into the crumbs, and mash and mix well with a fork. In this way the mixture will not become sticky. To one egg I use three times the quantity of crumbs, and the little chicks relish it very much. But the first meal in the morning consists of bread crumbs only, slightly moistened with milk. I never feed them any sloppy food. In the afternoon they get several feeds of steel cut oatmeal, also slightly moistened with milk. The last feed at night is cracked wheat, and enough is left near them during the night to help themselves to the first thing in the morning

After the first week the egg is discontinued, bread and cracker crumbs, oatmeal and cracked wheat constituting their diet. After the third week a mash is made for them consisting of one part fine corn meal, two parts wheat middlings, one part bran, one part animal meal, and a pinch of salt, fed in a crumbly condition, oatmeal during afternoon and whole wheat at night. Cracked corn I feed very sparingly, only sometimes for a change.

Fresh water I keep before them all the time, from the time they crawl out of the shell, although their first drink consists of milk, which they enjoy very much. Coarse sand and charcoal are before them all the time, and I forgot to mention that I mix with their very first meal a little coarse sand, and continue that until they are two months old.

Their water dish consists at first of an ordinary saucer, placing in the centre of it a small tin can, so that the little fellows cannot get wet, but merely can get their bill in it; this I substitute later on for a small tin can. Also, from the first I furnish them with lawn clippings of white clover, always fresh and as much as they want to eat.

Their quarters I keep clean, and during inclement weather shelter them from getting wet and chilled. It takes lots of work to care for them properly, but the labor is more than the outlay for food, etc.

I perfectly agree with the POULTRY KEEPER when it says that unless a man has love for poultry he need not try to make a success of it; love for the business is the first requisite.

Last season (1893) I crossed a Black Minorca cockerel on my Black Langshan hens, and the pullets from this cross are perfect beauties. They have the plumpness and greenish black plumage of the Black Langshan, combined with the activity and laying qualities of the Minorcas, with very large erect combs. They commenced laying on Oct. 20th, 1893, having been hatched in May. The only objection to any breed with large combs in this cold climate is having their combs frosted, which happened to mine during a very cold spell (December), and consequently I got but few eggs then.

My hen house is very warm, but last summer I built to it a scratching shed, which, although well enclosed with drop-siding, covered with shingle roof, large windows to admit plenty of light, wherein I allowed them to scratch all day among leaves, seems to have been too cold for them.

This season I intend crossing a Houdan cockerel with my Black Langshan hens to reduce the comb. What do you think of this cross for hardiness and especially for egg production? It is eggs what I am after. How would pullets of this cross compare with the Minorca cross for eggs?

And now, in regard to oatmeal for chicks. The steel cut oatmeal is pretty expensive food, as well as the rolled oatmeal. How would it do to have oats coarsely ground at a flouring mill, with hulls out? Would this constitute a desirable food? I have great faith in oatmeal for chicks. I consider my success due to its liberal use. I would also like to have your opinion on the use of *wheat bran—shorts* and *wheat middlings* to be mixed with steamed cut clover for their morning mash—what proportion of each should be used?

The shorts we have here in this, the greatest flour producing State, are ground very fine, with a reddish color, whereas middlings are the dark flour from wheat, very sticky.

May the POULTRY KEEPER long live. It is the most welcome visitor that Uncle Sam distributes at my home periodically.

[We endorse all that is stated above in regard to frauds, and we aim to keep them out. The World's Fair methods of getting prizes are also wrong. No paper is freer and cleaner from fraud advertisers than ours. In fact, we have a reputation for speaking right out, and that is why so many persons, as well as some prominent (?) men do not like us. Yet we will claim that in proportion to the number of breeders, there are as few frauds among poultry breeders as among other classes. In regard to the inquiries above we will state that we fear the Houdan will be no advantage in Minnesota. It is a grand breed, but is not as hardy in a cold climate as some others. Ground oats, sifted, are equal to any food for chicks. We prefer the middlings to bran, but it should be cooked as bread, owing to its adhesiveness, which is proof, however, that it contains gluten. It is perhaps, better to mix them, and sprinkle on the cut food.—ED.]

FROM NORTH DAKOTA.

"SUBSCRIBER."

I am just starting in here intending to raise broilers for a living. I have a good incubator house built and a fifty-two feet compartment brooder, heated with a boiler. I have one 200-egg Reliable incubator and brooder combined that I will use for a nursery, and as I am a tinner by trade, and have my tools and everything necessary, I am going to try and build my own incubators. Of course I am too late to do much business this year, but I can get in good shape for 1895.

As a subscriber of your worthy journal, I beg leave to let you know how we are getting along out here in North Dakota, or better to say, to suit Eastern people, in the "Wild West." "What is the matter with Dakota for poultry?" I saw in a sample copy of a poultry journal, last August, where an Ohio man offers his stock and incubator for sale, and the reasons he gives are that he expects to move to Dakota. Now it looks very strange to see such an advertisement. That man must think that a hen has no business to live out in Dakota, but that is where this man makes a great mistake, and if he did dispose of his chickens and incubator at that time, and come out here, I am sure he is sorry by this time, or else he does not want to keep poultry. I have been raising poultry for five years, and have come to the conclusion that they are not only paying for their feed and the labor we give them, but by careful management there is a nice little balance in my favor by the end of the year. The first two years I kept what you might call "scrubs." Well, they are all right to start with, and thus learn how to raise chickens, but now I have nothing but good stock. I took at our last county fair first prizes. I am not depending upon my chickens for a living, but I am satisfied to say that I could make a nice living and a little money besides if I get right down to business, and that right out here in Dakota, too. Now, as much as I know about keeping poultry, Dakota is all right. Yes, we have long winters, but, then, anyone who thinks anything of his chickens can provide such houses that the winter is not the least trouble. Look at the wheat straw that is burnt here, and can be had for the hauling. The time is not far away when Dakota will have one of the front seats in the poultry business. The farmers are beginning to see into the theory that it pays better to feed their wheat to chickens, and get from fifteen to thirty-five cents for eggs, than to sell it at forty-five cents, as they are doing this year. And as regards a market, we have as good a location as any town, with St. Paul and Minneapolis and Duluth east of us, and Montana west. I raised 400 chickens this summer, and intend to keep about 200 over during the winter. I have two houses, one twelve by thirty-two, in two parts, and one fourteen by forty-five, in four parts. I do not want to take up too much space in your paper, but seeing such reasons given for a man to dispose of his stock makes a man who has been out here for ten years, and knows what he is talking about, feel a little rough, and I feel it more or less my duty to give my experience for the sake of North Dakota. In conclusion, will say I am very much pleased with your paper, and as long as a rooster crows in my yard, the POULTRY KEEPER shall be here to let him know if he has any business to crow or not.

FEATHER PULLING AND ROUP CURED.

J. W. CROWELL, CAMBRIDGE, MD.

Having frequently read of inquiries about a remedy to cure feather eating in poultry, I have concluded to give you my remedy, which I have never found to fail yet. Take good, strong snuff, some old grease, mix well together, and then add a drop of carbolic acid; smear lightly on the hare spot, and on the feathers around it, and you will have no more feathers plucked out of that bird. And here is my remedy for roup. After trying all the fancy and scientific remedies ever published, I use plain North Carolina tar and honey, equal parts, with a drop or two of carbolic acid, just to flavor it a little, and then open the chicken's beak and daub a little on the root of the tongue, so the bird has to swallow it. Apply every other day, and he will soon get rid of roup. The first cold spell we had last fall I had twenty-four choice pullets that began breathing hard with a villainous rattle in their throats, and the number kept increasing for two nights after, until I had fifty in the hospital. This remedy brought them all right again, as bright and happy as any in my flock. Now, while I am writing, if not trespassing too much on your space, I would say that this simple remedy of tar and honey is an excellent remedy to cure a cough in a horse. Just daub a little on his tongue three or four times. It cured a cough in a valuable brood mare I have. Now if you have a dog that you prize highly, and he gets bothered in hot weather with fleas and scratches—use sour buttermilk—apply it on with an old rag, and two or three applications will cure completely. Sour buttermilk is also good to cure scratches on a horse's leg. I never tried it for that purpose, but learn that it cured a very bad case after other remedies had failed.

These are good remedies. I have used them for some time and found them the best I ever used for the purpose. After using everything I ever heard of, without good results, the above had the desired effect.

[Our readers should make a note of the above, as the remedies are harmless and simple. If tar and honey will cure roup, and sour buttermilk possesses the virtues claimed, our readers are under obligations to Mr. Crowell.—ED.]

MILL FEED.

F. L. HOOPER, BALTIMORE, MD.

We desire to call the attention of poultry writers, and the editors of our worthy poultry papers, to the mistake they frequently make in giving directions for the feeding of the product known in the commercial markets of our country as "Mill Feed." Here is a specimen of many similar to it. *Question by subscriber.*—Will middlings improve the grain meal for the morning mash? *Answer by Editor.*—We hardly think middlings would add much to the food ration, but shorts (bran) especially in summer would improve it.

The above is not confined especially to one paper or writer, but to many. The writer is a particular advocate of mill feed for stock feeding generally, and regrets to notice such uncalled for errors, or mistakes, made perhaps by an oversight. The difference in the feeding value of bran and middlings are about four cents in each hundred pounds. This is correct, according to chemical analysis, and also by actual feeding experiments. This difference is actually so small that bran and middlings may be rated as being equal in feeding value. To give a correct answer to the above question, based upon the true principle of stock feeding, and also upon my observation of the manner and custom of mankind appertaining to their system of feeding,—would be that middlings is the best to use. Why so? Because one quart (the usual way of measuring by our fowl breeders) would contain more substance and greater feeding value than bran, but at the same time, if bran was substituted and weighed out by the pound, I would much prefer it, simply from the fact that it would suit, or be a better substitute, or answer the purpose of our fowl breeder's in what they term bulk or roughness in feeding, perfectly appropriate, and of estimable value to the practical stock feeder, but I regret to say that the term is entirely out of place in fowl feeding. This idea of bulk or roughness in feed led to the use of cut clover hay, which perhaps would have never been introduced in fowl feeding except for the bulk or the roughness it may furnish. Perhaps cut clover hay has special merit in this respect, but I regret that I cannot view it in that light, as the amount of undigestible woody fibre that is in clover hay more than balances the amount of its good points, nitrogen, lime, potash and phosphate. Again, it is a poor substitute when steamed and otherwise treated for green food in winter. Green clover, when fresh and young in growth, is perhaps to-day the best green food obtainable for feeding of our fowls, but after it is cut and sun dried, and all of its virtue practically changed, it is in my judgment of very little use in fowl feeding, except for furnishing bulk or roughness. Another glaring defect in feeding mill feed which seems to me to be universal with poultry keepers, is that they recommend' or use in the same ration, both bran and middlings. Who ever heard of a horse or cow feeder giving one measure of bran and two measures of middlings in a feeding ration. Why, the idea is simply ridiculous in the extreme. It seems that the nature or composition of mill feed is the least understood by poultry keepers than any other article of food.

Take one quart of bran and rub it lightly over a number twelve sieve (oat sieve) and you convert or change it to light bran and light middlings, but you do not alter the composition of the feed. You simply break up the coarser particles of the husk of the grains of wheat into smaller particles, and make no other change whatever. This fact must be admitted as being true, and therefore the mere mixing up in a poultry food one measure of bran and two measures of middlings, etc., is compounding a mixed feeding ration of no practical use. Make use of either bran or middlings separately, but be careful to specify quart or pound in your measure of use, as this is very important. One pound of bran will measure two quarts.

Several of our largest milling establishments convert or grind up all the bran they make into medium middlings of twenty-five pounds to a measured bushel. Several firms purchase heavy bran, sift and separate into light bran, light middlings and medium middlings. This article was intended to cover the good qualities of Mill Feed and therefore the subject of "Errors in Feeding" must be discarded excepting—what will pertain to the original subject—Mill Feed. This term is used in the commercial markets of our country to specify a kind of feed which is a waste product in the milling of wheat in the manufacture of flour for human consumption, and is that part called the husk or outer covering of the grains of wheat. In its composition there is a considerable quantity of phosphate of lime, (phosphoric acid), which gives it a considerable feeding value for food when given to young and growing animals, and is specially adapted for the laying hen, in providing a large supply of phosphate, lime and nitrogen, in a form that is perhaps more soluble and cheaply than can be supplied by any other feeding stuff. The young and growing chicks are required to be fed with a food that contains the component parts or substance necessary to make growth of bone, muscle and feathers.

Bran or Mill Feed will supply, with the addition of a more nitrogenous food like linseed meal, the best and cheapest form to supply them. Mill Feed can be fed at all times and seasons of the year in a mixture with other food, only requiring the mash to be mixed freshly for each meal, but when given or allowed to sour, it is then only fit for feeding your hogs. They seem by nature to be endowed with digestive organs strong enough for fermented or sour food, but otherwise it is an excellent food for your young or old fowls as well as other stock. Mill Feed is known by at least a dozen different names, but only thus used outside of the commercial markets. The following is a part of the names used: mill feed, bran, middlings, canelle, shorts, ship stuff, red dog flour and flour middlings. With so many names they are misleading, and of no earthly use, and all except the commercial terms should be discarded, which are the following both in name and weight. Light bran ten to fourteen pounds to the measured bushel, medium bran fourteen to sixteen pounds, heavy bran sixteen to eighteen pounds, light middlings eighteen to twenty pounds, medium middlings twenty to twenty-five pounds, heavy middlings twenty-five to thirty pounds, flour middlings thirty to thirty-eight pounds to the measured bushel. A quart of light bran would weigh about one-half pound, one quart of flour middlings would weigh about one and one-half pounds. A feeding rule to use quarts in one case, and another which would designate pounds, would make quite a difference in the final result of your feeding. It is perhaps advisable to cover the wants of most poultry keepers to recommend the use of light bran, especially to our poultry friends the advocates of bulk or roughness (the clover hay class) in fowl feeding; in fact, the writer is firmly convinced it is the best for all purposes of stock feeding to use the light weight bran. Hereafter please use the correct names in giving directions for the use of mill feed. How provoking it must be to our respected female poultry keeper in her efforts in trying to purchase shorts from the average feed dealer; it certainly must be quite amusing, although she may not be able at all times to have her wants supplied, or get shorts in feed, but no doubt as a substitute shorts in answer.

[The above letter is one of the most valuable we have ever published. We hope every reader will peruse it.—ED.]

POINTS OUT REFORMS.

G. W. MERRILL, STOUGHTON, MASS.

I have long felt a desire to write something for the POULTRY KEEPER when I read what others are writing, but have not had the courage to do so until now. I have been a reader of your valuable paper for the last four years. While I have other poultry papers to read, I think the POULTRY KEEPER is the best of them all for practical poultry raising. But I find one must be able to sift the wheat from the chaff. Why cannot those writing to poultry papers write reasonable things instead of trying to see how large a story they can tell? I read in the POULTRY KEEPER some time ago of a man's experience with Brown Leghorns; they began to crow when a few weeks old, and he had to separate them from his hens. I have been expecting to hear of some one having some beginning to lay when they were a month old. And a short time ago I read an article in the POULTRY KEEPER of a man who fed nothing but meat, and if he wanted more eggs, fed more meat; if less eggs, feed less meat; if they became broody, shut them up and feed them on air for ten days or two weeks, and then they were in good condition to go to laying. Wonderful hens those, that can produce something from nothing. Can you tell me what they are called and where I can get some of them? We have plenty of water and wind here in New England, but my experience has been that man or beast cannot produce something from nothing, and why write such stuff? It is misleading to new beginners. Another man in the last number of the POULTRY KEEPER gives his experience with some Mongrels, although he says he had Plymouth Rocks and Light Brahmas. Now White Plymouth Rocks and Light Brahmas are my pet breeds and I think I know a little about them. This man says he had his Light Brahmas laying when only three months and twenty-four days old. Wonderful again. If I get one at four months old to weigh five pounds I think I have done well. Some times I do better and some times not as well, but I do not think of their laying until they are matured enough to weigh from seven to eight pounds, and that takes from six to eight months. Is seldom that one of mine wants to set until it is too late in the spring for me to set her, but as most of these stories come from the West and South, I suppose that is the cause of it. This man wants to know if that is high enough. I suppose if any one tells one to beat it, he will try again. And while I think a great deal of what the editor says, and think his advice in almost everything relating to poultry is good, I think he has overdone the corn question, and I see he is taking "back water" on corn lately. He misled me until I had a little experience with it. I did not feed enough of it in cold weather. Do not misunderstand me; I do not believe in corn and nothing else, for I feed corn, oats, wheat, meal, wheat feed or fine feed, ground oats, scraps, cut clover and buckwheat, but my hens will leave anything that I give them for a kernel of corn. They have good runs to go in, and a large part of the season they have a five-acre field to go in, all but a little while that I keep them in their yards while my garden is growing, and still they will nearly kill each other in their scrabble after corn, and corn makes the yellowish leg when I get them ready to show or dress. I am not at home all of the time to care for them, but my wife sees that they are well cared for, and likes them just as well as I do. Why use your valuable space in writing how much poison there is in a kernel of corn, and how much it enlarges their liver, as one writer did? We raised about 300 chicks this season, and some very fine birds which I sold at good prices, and my hens have paid me a handsome profit. I will send you a sketch of my poultry house which we like very much, but it cannot be built as cheaply as those you have shown in your paper lately, and I do not keep as many hens to the foot as those do, for I do not believe in crowding, and let me say right here, keep right on, Mr. Editor, in fighting against lice, for I believe it is the cause of three-fourths of the ills of poultry. My house is two hundred feet long by thirteen feet wide, with ten pens ten feet square, with one window to each pen, and one in each end. It is covered with matched boards and Neponset paper, three thicknesses on the roof and one on the sides, and well painted. It gives me a three-foot walk on the back side. We do not have to go into the pen to get the eggs, or to let them out. One-half of each pen has a floor and the rest of it sand. The cost was $285.

[Thanks to Mr. Merrill. By criticising others he sent a most excellent letter, though some may not agree with him. We have his plans and will have cut made.—ED.]

POULTRY IN EAST TENNESSEE.

E. E. PAGE, KNOXVILLE, TENN.

Believing that all readers of the POULTRY KEEPER will be interested in a report from nature's poultry field, I will give a short sketch of what has happened in East Tennessee. I came here the first of December. My first step was to join the East Tennessee Poultry Association, which resulted in the efforts of eight or ten gentlemen, who pledged themselves to pay the indebtedness the show might fall heir to and receive one-half of the Press support. But now it is past, and the whole of East Tennessee has got poultry on the ends of their tongues. The show room was crowded from morning until late at night by citizens of Knoxville and surrounding towns, and many purses were filled with the golden shekels for sittings of eggs and fowls, and I can say, without doubt, that all of the 400 fine birds in the room could have been sold thrice over at a good price, besides the surplus stock in the fanciers' houses. It seem hard when people beg of the fanciers to be supplied, but the fanciers have to supply themselves also, and all poultrymen will do well to keep an eye on East Tennessee.

The association paid all of the premiums the last day of the show, and now all of its indebtedness is paid, and enough money is left to make the show a success another year, and without any assessments on its members. Poultrymen of East Tennessee, come and join us; come and make it a welcome gathering for all visitors who may come, from the North or South. I have seen, since I came here, young chicks newly hatched, and all ages up to the desired size for table purposes, all running together, and not a day but what "Biddy" could keep her downy ones warm. The fine climate, gravelly soil, and spring water, make this section the finest poultry country in the world, barring none, and I predict the day when East Tennessee will be acknowledged as the producer of the best poultry. A citizen of this place had his house, 390 feet long, burned down, with about 800 capons in it. It was a total loss of about $1,500, but with indomitable pluck and energy he will rebuild larger, better and not so compactly.

Coming back to my subject again, with land here from $8.00 to $50.00 per acre, who could not make poultry pay? An acquaintance here keeps sixty Leghorn hens, runs a china store in the city, and says he is delighted, and will keep adding until he has all he can attend to, and then the store will have to go.

I have sold nine incubators, mostly 200 and 300 eggs capacity, bone cutters, and there is a great clamor for poultry supplies. Unless any of the readers of the POULTRY KEEPER see anything to prevent success in this delightful climate, when the North is frozen up, we can go out and pick dandelions, blosssoms, and see the butterflies in the woods flitting about as happy as a summer's day. Not too hot or too cold. A Northern friend says he has never failed to have young chickens of his own raising to fry the year around. Hunting for a location, I have found some most desirable places to raise chickens.

The most common chicken house here is constructed by taking a board of sufficient length to reach the lower limbs of a tree, and nailing pieces cross-wise, so that the chickens can have easy access to the house. I have had twelve years' experience in raising market poultry and eggs, and will give the readers of the POULTRY KEEPER the benefit of my schooling, which has cost me many times over what I shall charge you—nothing.

If I can pass muster and hold the attention of the reader I shall fire away in my own style. I have managed and raised broilers from an old hen capacity to 3500 egg incubator, and will give you what I have learned without any tutor except poultry papers, and sometimes very little time for them. Contrary to the opinions of some, I can say that the broiler business is a success when rightly conducted, and could give some valuable pointers, and will tell the readers next how to make a success of it, and also how fancy and marked poultry are linked in strong and inseparable bands.

HOW TO QUICKLY GROW SHADE TREES.

W. F. LUPO, IRBY, GA.

"What is the quickest and best growing tree for poultry shade?" In answer to the above query you say, "Plum, peach or mulberry." For the benefit of the inquirer, and others who may possibly be benefitted by it, I will, if you will grant me space, give a little of my own experience right along this line.

We concluded last winter (after Christmas) to get a few hens and a rooster, and raise some chickens, and, strange to say, we found it difficult in this rural district to procure the needful few hens with which to start. Finally, however, we found, not very far away, some Plymouth Rocks (?) of the barred variety and bought five hens and a rooster at a very good price for such specimens, and commenced immediately treating them for scaly legs, and soon found that nearly all of them had what we supposed to be roup, contracted by roosting in a house from which the shingles had been purposely removed. Two of the best looking hens died; the *old* rooster managed to live through the summer, and a *few* of the eggs hatched, and we learned a little about the poultry business.

But to the shade trees: We are in what is known as the "wire grass region,' South Georgia, where (except along branches or swampy places) nothing grows but pines and wire grass. The pine is a failure as a shade tree, grows too tall and heavy, and is too easily blown down to be allowed to remain standing near one's dwelling house, so our little lot about 50 by 100 feet was as void of shade as the sea. Being recently settled, we knew that shade would be necessary, and remembered the quick-growing ornamental "Palma Christi" or castor-oil plant. We procured some seeds from another part of the State, where we had previously lived; planted them with some sun-flower seeds in separate rows, as early as it was safe, in a not very rich soil, and pretty soon had plenty of shade, dense and beautiful, which lasted until frost came in November. Some of the "Palma Christi" plants grew to the height of fourteen feet, and branched out over an area of no less than that, and were grandly ornamental as well as useful. The plant is a native of the East Indies, and while it is in tropical latitudes arborescent, it is with us and those farther north, the more dwarfy; but in any part of the United States, where much shade is needed, I believe it would be a success if favored with a rich, mellow soil, as it has been known to come to maturity as far north as Christiana, in Norway. On account of its very large, beautiful palmate-peleate leaves, which measures as much as two feet in diameter, it is cultivated as an ornamental plant. The new hardy hybrid hibiscus, advertised by our leading florists, is another nice shrub shade for poultry, and from seed you can have, the latter part of the first season, splendid shade and an abundance of beautiful large flowers, and of course it improves every season thereafter. These, for poultry shade, should be planted in clumps, the plants being about four feet apart; the Palma Christi in groves, the plants about ten feet apart. The writer has some seeds of each and will be pleased to supply any one who may wish to try them, free of cost. [We have grown the castor-oil plant in New Jersey. They are beautiful.—ED.]

GASOLINE FOR LICE.

In an experiment made in order to compare gasoline and kerosene (coal oil) for destroying lice, both on the roosts and on the hens, the gasoline proved much better than the kerosene. When kerosene came in contact with lice they were able to crawl away for a distance before dying, but if the gasoline touched one it killed it instantly. Where gasoline was saturated over the roosts, walls and floors it destroyed every insect it touched, evaporated quickly and left everything clean. When it was applied to the heads of fowls in order to destroy the large gray lice, the effect was to render them giddy for a few moments, from which they quickly recovered, seeming in no manner injured thereby. If applied to the body it creates the sensation of intense cold, owing to rapid evaporation, and for that reason it is not advisable to apply it to the bodies. Caution should be observed in the use of gasoline, however as it is highly inflammable when evaporating, and no flame, or fire of any kind should be near it. Use it only during day light.

SEND us money, money order, postal notes, or checks if you can, but if inconvenient send *postage stamps*.

RAMBLING THOUGHTS.

R. W. DAVISON.

I see by the various poultry journals that the oyster shell question is up once more. I thought that was settled long ago. You might as well feed the hens broken flint and expect them to lay lamp chimneys, as to feed them oyster shells and expect that they will convert them into egg shells. Even that great experimenter, Mr. Wheeler, is not sure that the hens derive any lime from this source, although he has experimented with that object in view. Hens must have grit of some kind, and as oyster shells furnish the most convenient way for *me* to get it, therefore, I feed them. There is enough lime and to spare in a well balanced ration without the addition of anything else. I have, before now, referred to Mr. White, of this place, as an experienced and successful poultryman. He believes in plenty of good clover hay, meat, and a large variety. As near as I can remember, he has never fed oyster shells to his hens—Black Minorcas—and yet he *never* gets a soft shelled egg. The above gentleman also owns a very remarkable hen. Early last spring she commenced laying double-yolked eggs, and kept it up until she moulted late last fall. She layed regularly every other day. I frequently saw these eggs, and they were nearly as big as two large Minorca eggs (she was a Minorca herself). The shells were just as perfect as any egg, and it was surprising to me to see how she could stand this great strain, and hold her own with the rest of the flock. The eggs were as large as a good sized Pekin duck's egg.

I see that Editor Davis has gone into "politicks" or some other kind of ticks. Don't do it brother. Poultrymen have enough to fight now without introducing this new insect. But—joking aside—I most heartily agree with him, and say kick the other rascals out, but don't for good-sake, kick the other rascals in. We have far too much whisky north as well as south. Tariff or tax on whisky is not protection or a source of revenue. Here in old Monmouth we receive *hundreds* of dollars every year for license, or damnation fees, and we, every year, pay out *thousands* of dollars to keep up our jails, run our courts—without intermission—and police our townships. No wonder the poor old hen has to come in for her share of the taxes. I tell you, brethren, political ticks are getting to be a mighty uncertain crop. One year the people push one way, and then the next they push the other way, vainly seeking for relief. The old hen will come out on top yet, as sure as cats eat chickens.

Rot! What is rot? It is used by numerous editors to show their contempt for something or other to which they don't agree. Someone will advocate a certain article, or state certain opinions, and then some editor will say, "that's rot, rot it is, etc.,' It is not argument. It is not a very elegant expression. It is nothing. It is rot. Great is rot. Let it rot. It has been a long while since some of our editors have been in the chicken business. They forget that "the world do move." They forget that what was considered good results five, ten or fifteen years ago is now out of date. It is now rot. They forget that science has been working at the "raw materials," and that results follow as a matter of course. They forget that the fancier, even of to-day, feeds for feather and not for practical results. They forget that the egg yield, or the production of the carcass, support their papers. They forget all this, and come out with—rot. Others believe all this, but they want to change it around, and make it appear as though they invented these modern ideas, and therefore, if we don't do as they say, or if we even say the same as they do, but put it in different words, or, if we rub the fur the wrong way, then it is rot. How expressive. How elegant is rot.

I was much pleased in reading of the great Crystal Palace show in the *Fancier's Journal* (Dec. 9th), that the writer places the Indian Game before the famous Dorking as a table bird. I am an admirer of the Indian Game, and like to hear it praised, especially when the praise comes from what we might call the home of both these breeds. The Dorking is a fine table fowl, and yet I think the Indian Game will go ahead of it every time. The Dorking has never been extensively bred in this country, and probably never will, owing, no doubt, to the fact that they are not considered as hardy as some other breeds. This can be remedied, as Mr. Sternberg says, by importing fresh blood from England. Then again we have a better bird in the Indian Game. This is a new breed to us, and yet it has made wonderful strides, and can now be found in every State in the Union. I am also in favor of a shorter leg. We have a specimen of leginess and neckiness already in the shape of the exhibition Games. When first introduced, I remember that some writer was expatiating on the slice after slice of toothsome meat one could cut from the breast of the Indian Game. Yes said another writer, but just see the slice after slice of air one can cut under that same breast. I don't mean that we should put a duck leg on this noble breed, but it should be, in my opinion, more nearly the length of the Rock, yet I would not sacrifice the noble Game carriage for all the legs in creation. This breed is bound to succeed—Mr. Geer to the contrary.

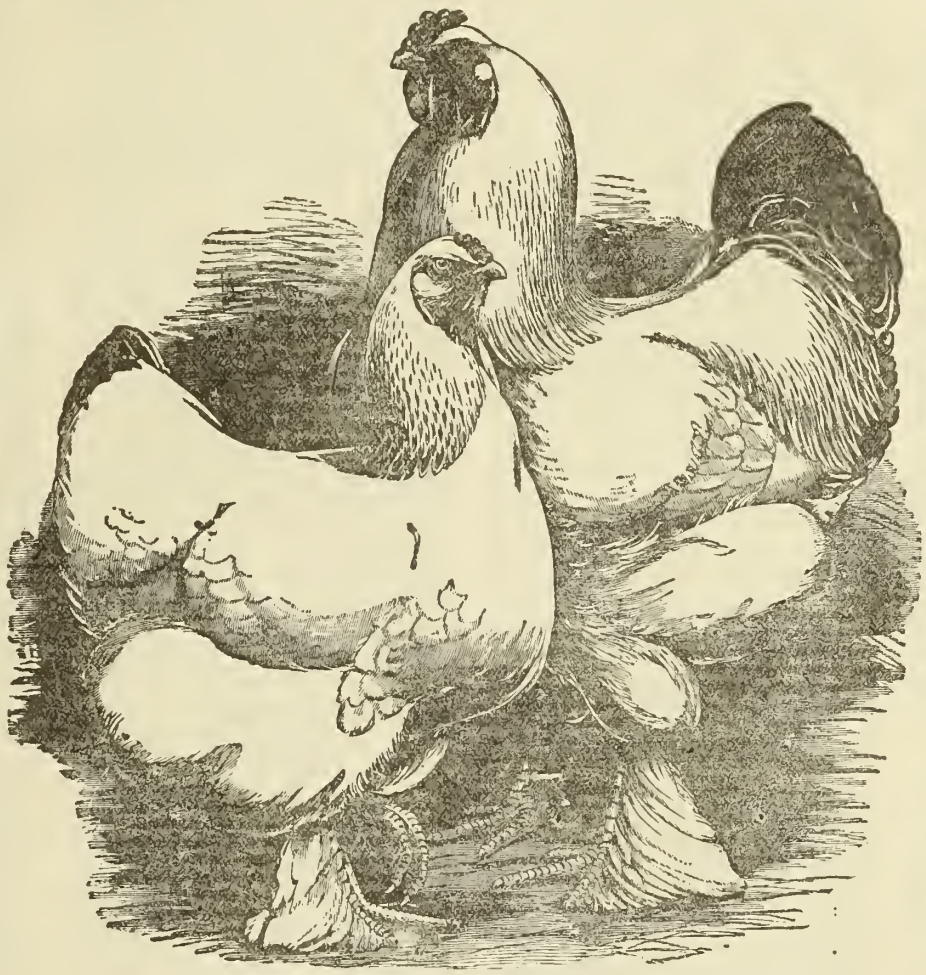
Allow me to dip a little more into the feed question. Some experienced (?) writers claim that the breed and not the feed has all to do with the sitting or non-sitting propensities of fowls. I have claimed, and many others also, that the feed and not the breed controlled these same propensities to a large extent. Why will the Leghorn carry a much larger amount of corn than the Brahma or Cochin, and yet refuse to sit, while the latter breed will sit on a rail fence if she can't find a better place? Simply because of greater or less activity. Mr. Riggs and a few others don't agree to this of course, yet facts are hard things to get around. It is only a question of time and bigheadness when all will agree thereto

I was very much amused while reading Mr. Gue's experience in December POULTRY KEEPER. Here it is: "I took a two year old Wyandotte hen and penned her up until she was rolling fat; then I put her in a flour barrel, on twelve glass eggs. * * * * She stood on the eggs three days before she would sit. Then I put the good eggs under her. She set on them and hatched eleven chicks from thirteen eggs. I allowed her out every day for exercise. This was in January." If that don't take the bun I would like to know what does. It didn't make any difference to him whether she layed or not, he merely fattened her up and set her. That's all there was about it. Now here's another from December *Farm Poultry*. Mr. Purcell says: "My pullets are all laying by Oct. 1st. If not or no prospects, they get a market right off. They lay through Oct. Nov. and Dec. and as long as they please. If they are heavily fed in December, they will get fat and a large amount of ground ginger in their grub will warm them up and they will become broody by the dozens, (if you keep that many.) * * * Last season our first hen was set December 31st, and several were broken up through that month because eggs were high and eggs were wanted more than chicks." These are every day facts, and make a good sized pill for some to swallow, but swallow it they must, only they manage to get behind the door so you can't see their disgusted faces, and when they again step out, all traces of agony are wiped away. The next thing you hear from that quarter is—*Rot*.

Let us step over to Belgium a moment, and see what we can learn from that little hustler—the Campine breed. The Campine district is quite barren, except where reclaimed by man's industry. I do not mean that it is actually a desert; it is what we would call very poor farming land. Here the little Campine breed thrives and lays. It is a hustler of the first water and has to be, for food is scanty and that great-good-for-everything-king (corn) is a stranger in that land. The peasant is, of necessity, economical; therefore food is given very sparingly. Science deals with the "raw materials." What are "scientific rations?" Let us see. The striving after nature might be considered a proper definition. Endeavoring to conform to certain rules and experimenting with the view of getting the best results. In applying it to the feeding of fowls, what is implied by "scientific feeding" It includes not only the feed but also the manner in which it is fed, and the circumstances under which we labor. Man in his travels around the world, finds many, to him, curious specimens of fowls, for instance—these are immediately taken under his protection and civilized. Food is plentiful, therefore, the fowls live high, roll in fat and cease to be productive. Much abused "science" comes along and says: "You are killing that breed with kindness; you should endeavor to conform closely to the circumstances under which it was found. If you confine them to small yards you must furnish them with such food as will make them productive, or food containing elements such as they themselves would gather if at liberty." What is nature's food. Grass, bugs, roots, grains, grinding material, etc. "Science" says, feed grains, meat, grinding material, grass, (or hay) and vegetables. How? In such a manner as to induce the greatest amount of exercise possible. A little at a time, etc. The closer you follow nature and the more you make your fowls hustle, the better will be the results. Some people seem to think that "scientific methods," are followed by a few cranks only, when the truth is that we all follow these methods more or less closely. A word is dropped here an idea there, and taken collectively it rounds out the whole. Mr. Know-it-all steps up and says; "That's my method, gentlemen; I worked it out myself." The fact is that if he really has a method he has little by little gathered it from this same scientific crank. We are all too apt to speak slightingly of what has been worked out in the laboratory or in the schoolroom. The "raw materials" are here handed to us and we use them, or rather apply them to our particular case or need, and forget to return thanks. How do the Belgium farmers get results? It will be noticed that the Campine (the name is probably derived from the Campine district in which they are found) breed is very active. It is small, and therefore its body is just suited to the rather scant food supply. It is active because it has to be, in order to get a living. The farmer also is economical, and only feeds his birds with a very sparing hand. Corn or other grains is not thrown down by the quart. The fowls don't hang around from one meal time to the next, expecting the bountiful supply. They, themselves, gather the much despised "scientific ration;" therefore are they called "poules-pond-tous-les-jours," or "lay-an-egg-every-day" hens. The trouble is not with the "scientific ration" but with the feeder who feeds it in a very unscientific manner. I have claimed that overfatness, produced by a too heavy feed of corn or other hearty food—has made sitters of Leghorns and almost non-sitters of Brahmas. The principal argument brought against these opinions or facts, derived from actual experience, is rot. How convincing thou art, oh rot? One dutchman says: "Give us der rest." The answer is wafted back, "I dun know der rest; off I did I'd gives it do you."

Since writing the above, I came across this startling statement in a poultry journal: "Breeders of Asiatics, who expect to get their fowls up to and beyond standard weight, must feed freely, profusely and constantly all the good sound corn the fowls will eat; if that be treason make the most of it." If any other man than Theodore Sternberg had written it I would have passed it by. It certainly is not treason, but what so surprised me was that he has layed the stress on *corn* instead of where it belongs—viz., free range and animal food. Mr. Sternberg believes in both, and according to himself, small fish, dried blood, or some kind of animal food is plentifully used. Even for growth corn without the range or animal food would be a failure. Mr. Sternberg knows all this and yet why does he put the stress on corn. I am perfectly aware that *corn* and a *range* will produce excellent results, especially when a man, like Mr. Sternberg, has the oversight. Up to two years ago I bred Asiatics—Light Brahmas—and although I fed little corn, yet I had no difficulty in getting them up to and above standard weight. As I have said before, feed that which gives *you* the best results. I did not intend to refer to the growth of turkeys again, but for the above I will show the progress in growth of the young Bronze gobbler mentioned not long ago in the *Fancier's Journal*. Those who have read the article will remember that I had ten turkeys, hatched August 5th, 1893. I weighed one of the gobblers when he was three months and twenty-two days old, and he tipped the beam at ten and one-half pounds. Again when four months and fifteen days old, or December 20, he weighed twelve and one-half pounds. The last time I weighed him, January 3d, when five months old—lacking two days—he weighed fifteen pounds. When we remember that this growth has been made during cold weather we will see that it is remarkable and it shows what corn—not corn has only been fed occasionally during the coldest days—but what a well-balanced ration will do combined with a free range. I have not written this to get in an argument with Brother Sternberg, but simply to call his attention to the facts in the case. I have done, yet if argument it would be, it would be a pleasure to know that my opponent was a thorough gentleman, and that no matter what he said it would be from actual experience, and not from brass or a desire to say something to attract attention or work on the good graces of others, as is too often the case.

[Although the above letter is rather long, yet it comes from one of the best and most successful poultry breeders in this country and is a whole book full of valuable information.—ED.]



PAIR OF LIGHT BRAHMAS, FROM M. F. STELLWAGEN, ST. IGNACE, MICH.

DOUBLING THE BROODS.

The habit of giving one hen twenty or more chicks to care for is well enough after the weather becomes warm and mild, but those who hatch early chicks cannot afford to take such risks. Little chicks will soon succumb to cold. The down on their bodies is no protection, and the hen must impart sufficient warmth, as well as protect them from currents of cold air, or they will droop. A hen cannot care well for more than ten chicks in cold weather, for as they grow they require more room, and as soon as the chicks are so crowded that they cannot nestle under her they will begin to drop off, one by one, until but few are left.

LIGHT BRAHMAS.

The pair of Light Brahmas which we illustrate was sent us by Mr. M. F. Stellwagen, St. Ignace, Mich., and well known to our readers for his valuable contributions to our columns. He is one of the firm of Stellwagen & Kynock, leading jewelers of that city, and is one of its prominent citizens. He raises pure bred fowls for the pleasure in it, but, of course, like any business man, he prefers to make it pay. He wants nothing but prize winners if he can secure them, while his own birds have won in strong competition. In addition to Light Brahmas, he has prize winning Minorcas, Plymouth Rocks, Buff Leghorns, Partridge Cochins, White Wyandottes, White Wonders, and a yard of double laced Indian Games imported from England. His birds are choice, and he is a thorough breeder, a courteous gentleman, and reliable, his reputation being of the best.

GET in a little two-line or three-line advertisement in April. It will surprise you. If you sell only one sitting of eggs you will get your money back.

ERRORS OF FEEDING.

F. L. HOOPER, BALTIMORE, MD.

For the practical poultry keeper it is necessary that some knowledge be obtained as to the composition of the component parts of the different grains and feeding stuffs generally. In fact, without this knowledge, it is impossible for them to be able to feed their fowls upon a profitable basis. The market, or cash, value of feeding stuff will vary from year to year and will be cheaper in some cities than in others, and this is the principal drawback, I comprehend, in advising any cast-iron feeding system, although an expert in the art of feeding will care but little for the various market changes of our feeding stuff because it is no great art when once understood to substitute one or several grains or other feeding stuff for some other cheaper kind.

With these few remarks, allow me to suggest, or offer, our poultry keepers, especially the ones that are engaged in it for the almighty dollar, the following perfect food ration for the morning meal or mash: One pound light bran, one pound corn chop and half a pound of linseed meal, mixed with a small quantity of home-made condition powders to the consistency of a crumbling mess. Use hot water in mixing and feed warm if possible. This is an ideal egg-producing foods,or about as near as it is possible for us to compound up to the present knowledge of fowl feeding.

This morning mash (or soft food) is to be fed your laying hens each morning of the year. All that are confined in pens feed every other day; in spring and summer to all fowls having a free range. Give for the noon or evening meal a good variety of grains (except wheat or corn), though some corn may be given in extremely cold weather with the addition of green food, cabbage, beets, onions, sprouts, kale, spinach, cooked potatoes, turnips, etc., either cooked or raw.

You have, in this system, all the feeding knowledge that is desirable (outside of the knowledge stated in the first instance), or of any use to the practical poultry feeder. I have discarded, or fail to mention, anything about lean meat and green bone, because neither is within the reach of only a few or a limited number of fowl feeders, and, therefore, I have given you a feeding ration which will answer the double purpose of furnishing good egg properties and also the component part of meat and bone. In fact, if you are in the habit of only giving meat and bone every other day, the food ration above recommended to be given daily will supply all the necessary properties, or the substances in meat and bone, cheaper and more satisfactory.

Bone is used for feeding to supply phosphates, some nitrogen and also lime. Bran will furnish soluble phosphates better than bone; also some nitrogen, lime, potash, soda, salt and other egg food. Meat is fed by most poultry keepers because it is highly recommended, but, chemically considered, lean meat contains a very large amount, or per cent., of nitrogen, and its principle virtue is owing to this property' and the good results noticed in fowl feeding is from the nitrogenous principles it contains.

Linseed meal is substituted for this same property. It contains about one-half of the per cent. of nitrogen of meat, but it is better than meat (but not so concentrated) for nitrogen, because you have in addition to the valuable nitrogeneous principle, also a large per cent. of phosphates, potash, soda, lime and other important chemical properties that are required by the hen in her manufacture of the composition of the egg. Cotton-seed meal would no doubt be a better substitute for nitrogen than linseed meal, but unfortunately it is not quite as digestible. It contains some of the husks of the seed and they are not digestible, being similar to the cut clover hay, not well adapted for the hen to digest. They supply roughness or bulk and make a splendid cattle food, but we must provide our fowls with concentrated foods for the best results. Nature in her own way never feeds the fowl family in any other manner, as insects, worms, bugs, seeds of every kind are foods concentrated beyond any doubts being nutrogenous in some respects and they are what might be termed soft foods, because they have a large per cent. of water or juice in their composition Corn is added to the ration because it is a food distributed over a large range of our country and it is a valuable one when fed in mixtures with other foods. It is used in this ration for the supply of carbon or heat forming properties it contains, and will help to sustain the laying hen in the great drain upon the general system in forcing egg production, and also with warmth, during excessively cold weather, and in addition will furnish in small quantities other chemical properties that are necessary in the process of converting the raw materials in the composition of the finished egg.

Now, in concluding these few remarks allow me to suggest that, in addition to the excelsior morning mash, you give a great variety of other grains like wheat screenings (but no whole wheat). This article alone, if of good average quality, contains about a mixture of a dozen of kinds of seeds,many of them valuable for fowl feeding. Add to the screenings oats, barley, buckwheat and a little rye, and give this as a mixture to your fowls, and I am sure the cost will be reduced and the profits greatly enlarged both in egg yield and the perfect health of your fowls.

The practical experience and knowledge of the art of fowl feeding is of estimable value to every keeper of a few fowls. How few of the average plain farmers of our country that are keeping the usual farm stock and the ones to be interested in the proper feeding of said stock, are but slightly informed and many entirely ignorant of the simplest rules of stock feeding. Very few of them will take the trouble to compound or mix suitable foods for a proper ration for their stock. The dung hill fowls of the average farmer have an acquired instinct, or rather a hereditary in-and-in breeding for eating corn and know not ing of that change or variety of foods that are given by our wide-awake practical keepers to their flocks, and let me ask the question: Is it feeding fowls upon any principle of economy or upon any discovery of modern science to simply throw out corn three times per day to your fowls and call this feeding poultry? Why, it is down-right nonsense to entertain for one moment such an idea. This will also hold good in feeding any other stock. Your system of feeding, to be profitable and to keep your stock healthy, must be carried out upon a change or a mixture of different kinds,not upon any theory that animals will not keep up a good appetite when fed upon a single food. This is worthy of consideration, but the principal fact in a variety is that you supply a greater number of important and necessary component constituents to make or repair the waste of the various tissues and muscle, bone, sinews, hair, lean meat, fat, rich blood and every other part of the animal system. No one article of food will do it, as it is an impossibility. Nature in her own way of providing for the wants of the animals in their wild habits, are supplied with a great variety, with an instinct to eat or acquire at different seasons of the year, a taste or liking for a great variety of food in their perambulations. If this was not the case it would be impossible, after they have been domesticated by mankind,to have been able to keep them in an improved way upon food foreign to what they had been accustomed in their wild habits. This being a fact beyond contradiction, it requires no further argument to instruct or teach us to feed a variety, but use some judgment in the selection to subserve some particular requirements.

[What Mr. Hooper means by the excelsior system is simply a mixed grain ration, The substitution of linseed meal for *lean* meat is an excellent suggestion, but as linseed meal is always rich in fat, it cannot always take the place of lean meat that contains no fat, especially if the hens are fat. It is, however, a food that is neglected and should be more extensively used.—ED.]

EXPERIMENTS IN OPERATING AN INCUBATOR.

F. A. LEHMANN, 1350 PENNA. AVE., S. E., WASHINGTON, D. C.

So far as my experience goes, it is immaterial whether air is allowed to pass through the incubator or not during a hatch. I have used the same incubator and had just about the same results whether I pasted up every possible source of ventilation until the 19th day, when moisture was applied, or allowed ventilation during the entire hatch. If no ventilation is allowed, no moisture can be used until the 19th day, when the ventilator holes should be opened to their full extent. To this one rule, no ventilation, no moisture, I believe there is no exception. Moisture should never be used unless ventilation is given the same time.

If the eggs are fresh they do not need to be turned for the first three or four days, and so, in filling the drawers with eggs, I always incline the drawers and stand the eggs on their small ends and then do not touch them until the third or fourth day, when if there is good sunlight, I test the white shelled ones. The dark shelled eggs I leave for two or three days later. By taking out the non-fertile white-shelled eggs, which can be accurately tested on the third day even by one who is not an expert, enough room is left to enable the other eggs to be laid upon their sides and then they should be turned regularly. I stand the eggs on end, after taking out the egg turners, because in this position they do not occupy much more than half as much room, and not only is incubation begun in the large end, but nearly double as many eggs can be placed in each drawer. By the time the testing is done there are enough fertile eggs left to make a full drawer. I always turn the eggs by hand, as I prefer to get the largest hatches possible, and so do not use the turners.

Never double layer the eggs in a top heat incubator, unless you wish to lose every egg in the top layer. Every quarter inch in heighth in a top heat incubator represents one degree in heat, so that if the top layer is two inches thick and the lower layer is kept at only 100 degrees, the top of the upper layer is kept at 108 degrees. Should the eggs of the top layer hatch, not a chicken will live. I followed "double decking" for a long time and only learned this by sad experience.

I try never to allow the heat to rise above 102 degrees, and prefer to keep it at 100 or 101. Where I kept the heat at 103, the eggs usually begin to pip on the 18th day, and as this is three days sooner than a hen, it is conducive evidence to me that this is too high a degree of heat. If your incubator has a good regulator, the regulation of the heat for the first two weeks is readily done, but during the third week, where the animal heat in the eggs is beginning to show, I change the regulator to shut off at 100. Even then the heat often rises to 105 or 106, when I open the door until the heat falls. During the warm months I often have the doors wide open from morning until night. During my last hatch I had the regulator to shut off at ninety-eight degrees.

I have used moisture during the entire hatch, and lost nearly all my eggs from excessive moisture; have used no moisture until the tenth day and then a small quantity until the nineteenth, when a full quantity was supplied with much better results; and no moisture at all until the nineteenth day, with the best results. To-day I say to every one, throw away your moisture gages and leave your moisture pans empty until the nineteenth day and then supply all you can and you will never regret it. If moisture is supplied before this time, the chicks begin to grow prematurely and fill the entire shell, and then they are not likely to get out. The incubator manufacturer who sends out instructions to keep the moisture pans always full, as some do, are responsible for the loss of their customer's eggs, and deserve to have their incubators condemned in no measured terms. To those of your readers who have given up trying to use an incubator in disgust, and to those who are not now getting satisfactory results, I advise to keep the heat at 101 degrees, and use no moisture until the nineteenth day, and then use plenty and you will have gratifying results.

Now for results in my own hatching. I use two 300 egg Eureka incubators, made by J. L. Campbell. In my last hatch, I took out the turning devices, stood the eggs on end as closely as possible, tested out a portion of the eggs on the fourth day and began to turn them by hand twice a day. I allowed ventilation, kept the heat at from 100 to 102 degrees, until the last week, when the animal heat began to rise too high, and then I changed my regulator so as to shut off the flame at ninety-eight degrees; and on the nineteenth day I supplied moisture. The degree of heat during the last week was evidently too low, for the hatch did not begin until the night of the twenty-first day. On the twenty-third day, I took out the drawers and I never saw such a sight in my life. From 370 fertile eggs there were 312 chickens. This is the largest hatch I ever got, but I believe I can duplicate it right along with either one of my incubators.

There is one feature in these incubators to which I desire to call attention, believing that it is specially good. The moisture pans are so constructed that all the air admitted for ventilation can be made to pass directly through them. Each one is provided with a cover having two openings through it, and each opening has wires across it to keep the chicks out and a sliding cover to regulate the amount of air to be admitted. These pans need not be used at all until the moisture is applied, unless so desired, but when the pans are filled and the air is admitted, it passes over the top of the water, becomes saturated, and then rises around the eggs. Until I got these pans I always felt more or less uneasy after the moisture was applied, until the hatch was well under way, but I rest easy now. I wish others would try these pans and then report results.

While I feel competent to tell others how to hatch chickens, I wish others would tell me how to raise them afterwards, for I have failed sadly. I have one of Page & Woods heaters, consisting of a furnace, from which extend hot water pipes through boxes closed at their outer ends, but provided with curtains at their inner ones. The heat is kept up to a higher degree than is absolutely necessary, but the chicks are free to range themselves wherever they please at night. The temperature in the room never falls as low as seventy degrees unless on very cold nights. The feed consists of millet seed, crumbs, ground meat and bone, green stuff, and charcoal and grit is always kept before them. In spite of my care, they die at such a rate that it is almost impossible for the incubators to keep up with them. Roup, or some kindred disease, has carried them off so fast that out of about 500 last hatched only about seventy are left. Ventilation is good, there are no drafts that I know of, there are six large windows admitting light and sunshine, and I have only fifty in a pen. There are no lice.

MANAGEMENT OF POULTRY.

LEG HORNE, WASHTUCUA, WASH.

If you will permit me, I will give you a little of my experience with poultry; the paying side of it. I have not seen but one copy of your paper since I have been in the West (December number), but, now that I am located, will have it sent on. I think we are all beginners, but perhaps I can help some that are new at it. In the first place, procure good fowls. I suppose you say any fool knows knows that. A great many fools do not know it. Make up your mind what you are feeding for, then know what you are feeding. If all grains were $3.00 per bushel, there would be less failures in the poultry business. In one issue of the POULTRY KEEPER I saw an article where a gentleman fed meat alone I will not dispute the assertion, as I think it about right, but I never dared to rely entirely upon meat and bone. But if meat and bone, (cook the meat), are fed in connection with ground peas, beans, cooked and mashed potatoes and flax, (linseed meal), a cabbage each day, for a variety, and skimmed milk, if possible pure, (water if not), in the feed, you will have no occasion to wonder why your hens don't lay. In fact, you will wonder why they do not stop laying. Such has been my experience at least.

I hope every one's experience does not cost them as dearly as has mine. This is meant for beginners only, as I suppose all old poultymen know as much about it as I. Perhaps some of you think meat is too high-priced to buy. When eggs are thirty cents per dozen, you can afford to pay fifteen cents per pound for meat. Be sure and feed lean meat, as fat produces fat. I say I cook the meat, and for this reason: When cooked it is much nicer to handle and all the goodness is retained. The bones are easier to grind, and can be fed as thought best. I feed bone twice a week.

If you are convenient to an oyster bed, you can use oyster shells; but don't think they are necessary, as the most they are good for is to sell. What breed is best? The one you fancy most and best suits your climate and convenience. I have bred twenty to thirty breeds, and they were all good if cared for as they should be. As good a fowl as I ever raised was a cross between a Rosecomb White Leghorn cockerel and Light Brahma hens. That was in a colder climate than Washington, but they are good anywhere. Always use pure-bred fowls. They can be raised as easily as scrubs. Good birds can always be procured at a reasonable figure from responsible men.

Some kind hearted old lady will always tell you to give your fowls plenty of fresh air. Now, if you want to be kept busy digging holes and planting your stock, follow her advise. Keep your coops clean and the air will be fresh. It is not necessary for the air to be cold to be fresh. Neither can you build a house so tight that it won't be ventilated in cold weather. If at any time your fowls droop, and are dumpish, and you do not know what to do for them, separate them from the rest of the flock and try to learn. If you have no other place, use the spade the same as you would if your house was ventilated.

Of coure your chickens are lousy. Well, that is easily remedied. Fumigate with sulphur, then take air-slacked lime, (some sulphur in that will not do any harm), and give it a good bath; use kerosene on the roosts, or, better still, take tobacco water, and use it thoroughly, and that alone will do the work. By keeping a dust-bath where they can use it, they will keep clean. Have some lime and sulphur in that also.

I would like to say something about houses, yards, roosts, young chicks and incubators, but I do not want to paralyze the editor and old readers. Let me say this, any way. Use an incubator if you go into the business extensively at all; you will need one some day and you may as well start right. If you cannot build one yourself, they are cheap; in fact, cheaper to buy than to run any risks building one if you have had no experience in that line. Don't ask how much to feed. I might have Brahmas and you Leghorns. I might be feeding for market, or for fertile eggs, and you for eggs alone. If I have tired you, I am sorry and will not again be guilty. You have ere this discovered that I am a poultry crank, but in my 'crankiness' there is money, and I hope that all who begin the New Year raising poultry will be successful, as I would like to help all beginners to begin right.

HE FEEDS TOO OFTEN.

"SUBSCRIBER."

I have been a subscriber of your valuable paper for one year, and a reader of it some time before. I will give my experience with chickens since last spring, compared to my neighbors. I have been raising chickens since I was fourteen years of age, but commenced raising thorough-breds three years ago. My success the first two years was not very good, but still I would not give up. This year I have been trying to follow the teachings of THE POULTRY KEEPER as near as I could. Last spring I hatched, by the hens, sixty-seven Light Brahmas, about forty Black Minoreas, and about seventy-five cross-breeds. Up to four months old I lost four Brahmas, about twenty Minoreas and twelve half-breeds. About the first of October the cankerous roup got among them. I took the sick ones out as soon as I noticed them, and put them in separate pens from the rest. I lost five of the Brahmas and all of the Black Minoreas. I had left about three, and I am going to get rid of them as soon as I can find a buyer for them, as I do not think much of them for this climate (Western Pennsylvania). For the roup I gave them chloride of potash in their drinking water, and painted the sores in their mouths with chloride of iron, twice a day. Some of the

worst cases I cleaned the cheesy matter out of their mouths, and touched the sores with lunar caustic, once a day. I have seventy-five hens in all, and have 500 feet of floor space for them. My main house is boarded up and down with twelve feet boards, lined inside, and packed between with hay, with plenty of light, about twenty-five square feet of glass to every 150 feet of floor surface. I also have a shed, boarded with tongue and grooved boards, on three sides, and open to the south, for scratching, and have about four feet of chaff and leaves in it. In the morning I feed boiled potatoes, mashed and thickened with one part cornmeal and two parts bran, fed warm, and at noon I scatter three pints of wheat in the shed for them to scratch in; at night I feed oats. With all this care I am not getting one egg. I keep lime, etc., where they can get it all the time. My chickens are not over fat, and always appear to be happy. My neighbor has a chicken house 250 feet from mine, boarded up and down, all the cracks open and never feeds his fowls warm feed, and some days they are not fed at all, and one-half the time only once a day, and that in the morning. He cleans the house twice a year, while I clean mine two or three times a week; his also had the roup when mine had. He has been getting eggs right along and I am not getting any. Who can explain the cause? I would like to hear from some experienced person on heating chicken houses; whether it is a good plan and which is the best method. I have never seen anything on that topic yet that I considered very good. I would like to see some different plans, as I expect to build a new house next spring or summer, and want the experience of some reliable man on the subject.

[Your hens being fed *three* times a day are surely overfed, and that is where your mistake is.—ED.].

BURNT OUT, BUT UP AGAIN.

D. A. FOLK, LEIPSIC, OHIO.

The POULTRY KEEPER is my only solace now. As I said in my last article, all was sunshine to-day but to-morrow may bring a weasel. When I last wrote I was in high spirits, soaring too high. The elements were new to me; they became contrary; I lost my balance and down I came like a thunder-bolt. It occurred on this wise: At four o'clock one morning my eldest son was aroused from his slumber by the hooting of an owl, it being the first one we had ever heard near the house. He listened, and while meditating on its daring, he thought he heard something like fire crackling. On looking out, the first sight that met his gaze was the new poultry house and wind derrick developed in flames. "Fire! Fire!" was what I heard. It took me fully fifteen minutes to find my pants. Bells began to ring, and in a few moments neighbors made their appearances, and by hard work we managed to save our dwelling and barn. A 16x22 hatching and brooding house, two stories high, in which were two hatchers, nine brooders, bone mill, lawn-mower, barrel of coal oil, chicken fixtures, etc, seventy cords of dry wood, three thousand feet of lumber, wind-pump, fifty-foot henery, (new), all went up in flames, while I, well, "I went down." What made me feel the worst was that one hundred chicks, three weeks old, were in that fire, wondering why I was making their brooder so warm. Poor, innocent chicks! It was a grand sight, at dawn of day, to see all my future prospects ascending into the clouds, while I was left a solitary mourner. My insurance had just run out. O, that owl! How I venerate his noble name. If he had not warned us, (even if to save chicks for his future appetite), all we have, would have gone the same road. Don't let me hear any one speaking ill of him, for I am his warm friend. The next day I wondered if the poultry business pays. It was so very dark I could not see for a week. Finally I said, "Wake up, old boy, the weather is fine and you can get started again, if you only 'will.'" So I cleared off the rubbish and set out 100 peach, seventy-five plum and twenty-five apple trees as a starter to get warmed up. Then I put up a new wind-engine; next I built five rooms, 12x15, for winter layers. They are snug and warm. Next I sent to old Kentucky for a pen of Light Brahmas and bought another pen nearer home, of the same breed. I already have a pen of Brown Leghorns. In short, I have eight nice rooms, containing fifteen to twenty hens each, with all fixtures necessary to make the work light on myself, and I must say that it is a real pleasure to hear their merry henology when they hear me coming with their warm breakfast. These lively, contented chickens encourage me to go ahead. I cannot give up without another struggle; no, never! As I have just finished my rooms, I shall next make a half dozen brooders, (hot water); also another batcher as a starter. Thanks to the POULTRY KEEPER, as I said in the beginning, it is my solace. When I read of others failing and making mistakes, I just conclude to crack my whip and drive faster. Maybe I shall overtak some "poor chap" going my may.

A Prolific Turkey.—I have a White Holland turkey hen that laid seventy-seven (77) eggs before wanting to set. Who can beat that? I cannot do without the POULTRY KEEPER. It is the best paper of the kind published. —*Ida Brush, Gervais, O.*

WHY THE FARMER FAILS.

GEO. W. WIMMER, PLYMOUTH MEETING, PA.

As I keep chickens and am a subscriber to the POULTRY KEEPER and have read a number of poultry papers, I think the POULTRY KEEPER is the leader, and all persons keeping poultry should subscribe for it. The great trouble is to get them to part with that fifty cents. They all know how to keep chickens, especially the farmer. He keeps no account of expenses and income. He keeps from fifty to one hundred and fifty hens over winter, from five to a dozen cocks, some of which he has bred from for two, and perhaps three years.

As soon as snow falls and the hens cannot roam over the fields, they stop laying, except a few that are hustlers, which lay an egg now and then, enough for the farmer to say without lying. "I got eggs all winter." During the winter he feed s night and morning. He goes to the granary and gets corn—it don't make any difference how much—takes anything that is close to him to get it in—pan, bucket or half-bushel measure—just so he feeds them; don't know its value or don't care, as it costs nothing apparently, and it was grown on the farm.

As soon as spring comes, and the hens can roam the fields, they commence to lay. We must admit that he has some good layers, but a great many will lay a few eggs and then become broody. He then picks out the nicest looking eggs and nine times out of ten they are the eggs layed by the poorest layers, sets them and hatches chickens, such as they are. When you see him the following winter, ask him how many he hatched out. He will think awhile then answer about ——.

There it is, *about*. Now he don't *know*. Perhaps the eggs hatched well; he will tell you, one hen hatched thirteen out of thirteen, another twelve out of thirteen, and so on. After he is through, ask him where they all are. His answer most always is "Oh, I took (or sent) about —— to market (there it is again—*about*). Some died with the gapes; cats and hawks killed about —— (another *about*)." He don't know; won't know; don't want to know; don't know how many hens he has; don't know it is a waste of food to keep a number of cocks over winter; don't know it will pay to kill the cocks when hatching is over; don't know it will pay to get thoroughbred stock in the fall for next season; don't know how many eggs he set; don't know how many chicks were hatched; don't know how many chicks he marketed, and don't know how much feed he fed them. To sum it all up, he don't know that he don't know anything about chickens, but thinks he knows more than to be fooled into giving fifty cents for twelve copies of the POULTRY KEEPER.

A KEROSENE PLAN TO MAKE HENS LAY.

I. D. RIVENBURG, TALCOTTVILLE, CT.

As I am a constant reader of the POULTRY KEEPER, I thought I would like to make a laugh and some fun for the readers of that paper. I have read of straw and horse feed for making hens lay, but I have tried them all, and find in these short days a little kerosene oil is the best thing that I have tried as yet, as it is very cheap just now. While my neighbors have been complaining of the inactivity of their hens in producing eggs this winter, my hens are doing very well. I have thirty-four and I am getting a good supply of eggs. From the first of January up to date, which is eleven days, I have gotten 185 eggs, and mostly in the forenoon. I do not let my hens run, only in the finest weather, but keep them busy, about twelve hours a day, which is a very good day's work, and more than most of the working men are doing just now, and more than they have been doing in Washington since the special session was called to repeal the silver bill, but we will go back to poultry and let Washington take care of the other part of the business.

The way I use kerosene, to make my hens lay, is with a lamp and make your poultry house light twelve hours a day. Get your hens used to you and then you will have to get them used to the light. It is very easy to do if you will begin in the right way. At first I taught one or two, and they all soon followed her example. I have been two weeks at it now and all I have to do is to go in in the morning with my lamp and call them. They know what it means, and soon will begin to sing. Just as soon as I give them their warm breakfast they will begin to scratch in the litter for some grain which I put there the night before. Some morning, before my near neighbors are thinking of getting up, I have got from one to six eggs. I light my house about 5:30 a. m., and give them a half hour to get off their roosts, and then if there is a lazy one I soon get her off. Poultry are like people. There are always some in a flock that do not amount to much and should not be with the flock. Now, if any one will come and see my poultry at work in the mornings they would think kerosene a good thing to make hens lay, and perhaps it would be a good thing to get some of our neighbors up in the morning. It may be an advantage to some to know what breed I keep, as they may say all hens are not alike, but I keep one very tame breed, and one very nervous and wild, naturally quick to scare, the Black Minorca's and the Cornish Indian Game. I would like to ask and get an answer through the POULTRY KEEPER about the weight of my Indian Game. I have seven pullets that weigh forty-four pounds. Is not that a good weight? They are laying almost every day and are regular pets. As I am in hopes that some of my brother poultrymen will try kerosene to make their hens lay, I will close, hoping you will have the good luck that I have had.

[The weight is good for the whole lot.—ED.]

LEGHORNS AND BRAHMAS.

E. P. BOYD, ALEDO, ILL.

I would like to say a few words in reply to Prof. Cook's article, "Brahmas vs. Leghorns," in the January POULTRY KEEPER, not, however, for the benefit of those who raise Leghorns, for they well know their merits, but for those who do not, and whom Prof. Cook would have believe that there is no comparison between the Leghorns and the "lordly Brahma." This, however, has not been the experience of at least a few others, and please count me among those few. First, the Prof. says that the Brahmas are much superior to the Leghorns as winter layers. Now, for my part, I have no trouble in keeping my Leghorn pullets laying right along through the winter, and have eggs to sell while my Brahma raising neighbors have eggs to buy. Now, the Prof. wants to measure eggs by weight. I know there are Leghorns that lay small eggs, but then again there are those which lay eggs, which, for size, will compare very favorably with Minorca eggs, to say nothing of Brahmas. As to the number layed by these birds in a year, in almost any poultry paper you pick up you will find records of Leghorn flocks where the yearly product runs away up towards two hundred eggs. In the case of the Brahmas I have yet to see a record in which they exceed one hundred and thirty in one year. To quote his article, "When the eating qualities are considered, there is no comparison." Now, I think there is, especially when we take into consideration the fact that the Leghorn is fit for the table at least a month before the Brahma of the same brood is; but, perhaps, the Prof. does not like early fryers. We will grant that the Leghorn is wild, if a fowl that will hunt its own food, and which will make its own living on a farm in summer time, while the Brahma has to be fed, can be called wild. Then, if you would have Brahma pullets for winter layers, you must hatch them in those cold and rainy months, March and April, when your losses will greatly exceed those of the Leghorn man who hatches his winter layers in May or June. As to the sitting qualities of Brahmas, they are, at least those which have come under my observation, very poor sitters, being very heavy and clumsy, breaking eggs, and besmearing the others so that they have to be washed, and possibly spoiling the clutch. While the Leghorns do not sit at all, yet a cross between them and the Indian Games, Plymouth Rocks, or Wyandottes, makes a very good meat fowl and the best of sitters and mothers.

MAKING A SHIPPING COOP.

A. P. ALLEN, MEADVILLE, PA.

The main points to be considered, in making and shipping coops, are strength, lightness, and cheapness. For "strong" it needs to be able to withstand not only the weight of the fowls within, but likewise the hurried handling often required of the expressman. "Light," the coop needs to be, for this, in particular, and it makes the purchaser smile a smile of satisfaction. It shows that the shipper is alive to his customer's interest. "Cheap," it should be, but this point need not to be enlarged upon, for every breeder and shipper of fowls knows that the price of a coop, unlike the tariff of our political friends, is not considered in quoting prices on fowls. I will describe a coop that I have found very satisfactory in all three particulars mentioned. For the bottom use one-half inch stuff, corner posts of lath, and for top of frame, connecting corner posts, three-quarter of an inch stuff, two inches wide. Laths are not strong enough for those top pieces. Brace this frame with laths, four pieces, one to each side, nailed on diagonally from lower corner to opposite upper corner, and cover with strong muslin. I get an article for five cents per yard that answers nicely. Cover the top also with the muslin, except a space of about one and a half inches on each end for ventilation. This space is made by nailing a slat across each end, one and a half inches from the end piece, and tacking the muslin to the slat instead of to the end pieces. Number three tacks on the right side. For a handle take four small screw eyes, and insert about two or three inches from each corner on the narrow way of the coop. Then take two strong pieces of cord, about one foot longer than the coop, tie one end of each into the screw-eyes on one end of the coop, draw the cords together near the centre, and knot with two knots, each a little to one side of the centre. Then tie the loose ends of the cord to the remaining screw-eyes, and you have a handle not only ornamental but very useful, and should not be overlooked in constructing the coop as the cord is but a trifle. The size of coop will depend on the number of fowls to be shipped. For a single bird the bottom should be about 15x18 inches; for trios, 16x24 inches; breeding pens of five, 18x30 inches; all coops eighteen inches high. For the smaller breeds coops can be of less dimensions and for the big breeds, larger.

POULTRY IN TEXAS.

MRS. E. BROUILLET, DALLAS, TEX.

I have taken many poultry papers but yours is without a superior, for the simple reason that it is *practical* and matter of fact and therefore easy to comprehend. I am still successful with my poultry and very happy over it. Texas is a hard State to raise poultry, as persons wishing to buy want them for little or nothing, and every kind of food is dear here. The great trouble with our State is that it is an old State and still a very young one, if I may use the expression. Our people are slowly becoming aware of the fact that good stock is money, and before many years, with the spirit of energy that is fast gaining ground, Texas must become a big chicken market, as it is in many other things. Those who have fine chickens are very proud of them and recognize their worth too. I raise full-blooded Buff Cochins and Langshan hens, with Buff Cochin male, and the cross has given me beautiful chickens for the yard and table and I am satisfied, as my yard is too small to raise for selling. Have lost no chickens for one year. I never doctor them and if one was taken sick I would kill it, as I do not believe they can be doctored with any success. A clean house, well closed for winter and clean and airy for summer, plenty of good healthy food, and success will crown your labor with poultry. We have a fine climate and I have hens sitting now, and will give me chicks in two weeks and there is no reason for not making our State the banner State for poultry.

HOW ABOUT THIS?

ANDREW MILLER, NORTH OGDEN, UTAH.

I notice by the papers that most of the editors, or members, of the "A. P. A." are after you for your exposure of matters at the World's Fair, and to think that a certain man was elected, which they think, or seem to think, hurt you so much, but I guess you can stand all this and not be very much hurt. I also noticed in the POULTRY KEEPER an article about a man in New York whose strain won in another man's hands, and this caused me to think why you did not write a little more on that point and on the same party. He saw, in the *Fancier's Guzette* of Buff Cochins, shown in the hands of the same party, and are now in the hands of C. H. Johnson, of Indiana. In the November number you will notice, on page 101, a piece mentioning of the transfer of the stock, and in the same paper you will see the account of the World's Fair Show. He exhibited Partridge Cochins, Black Cochins, Silver Wyandottes, Black Leghorns, also Buff Pekin Bantams. I take about six poultry papers. He has advertised in them but before this show his advertisement read: "Plymouth Rocks, Light Brahmas and Golden Wyandottes and sheep." I have often wondered why he never advertised Buff Cochins and Pekin Bantams, Silver Wyandottes, Partridge Cochins and Black Leghorns for sale in any of the papers, or did he raise just a few especially for this occasion, or were they, like the Buff, transferred back to the owner as soon as he got home, like the Buff Cochins. I think he could tell us, especially as he is now in a position to do so.

FRESH AIR AND EGGS.

M. F. STELLWAGEN, ST. IGNACE, MICH.

Sometime since I sent you a rough sketch of my poultry house with double roof, sides, etc., and door in each end, and with *no ventilators at all*. As the winter progresses, I am satisfied that I have the correct thing. Now, in mild or cold weather, I simply have to throw these two end doors open, while I am attending to the feeding and watering each morning, and my poultry house gets a complete airing out while the birds are busy feeding; then when I am ready to leave I close both doors, which is done by hooking one on the outside and the other on the inside, and the poultry have pure, fresh air with no draughts whatever, as I have taken great care to close up everything, putting weather strips around the doors, double windows, etc. I never saw a healthier lot of fowls, and have to use great care or else they would all be laying. Now this may seem strange, but I do not want them to lay until the egg season comes on, as I wish to give my customers the very best there is in the birds. I have tried top and bottom ventilators, stoves, etc., but I want none of them for my henhouses. My hen house was always damp and cold, with the double roof, and my system of ventilating is very *dry* and *warm* and comfortable. For this climate the system of ventilators, top and bottom, only works destruction and dissatisfaction. I am thankful that I have been a careful reader of the POULTRY KEEHER, for I have simply copied after your ideas, which I always find correct.

[It is our intention to illustrate the poultry house in a future issue, with descriptions.—ED.]

THE POULTRY KEEPER.

Subscription Price, 50 cents per year in advance. Single number, 5 cents. All subscriptions commence with current number at time they are received. No subscriptions dated back.

Advertising Rates, 50 cents per Agate line ($7 per inch), each insertion. Fourteen lines to the inch. Advertisements must be received by the 15th of the month preceding date of issue to insure insertion.

Correspondence. We invite correspondence on the subject of Poultry that will be of interest to our readers, but respectfully ask that all articles be short and concise. Write on one side of the paper only.

Address all communications to

POULTRY KEEPER COMPANY

PARKESBURG, CHESTER CO., PA.

Entered as Second-Class Mail Matter at the Post-Office, Parkesburg, Pa.

P. H. JACOBS, Editor.

Residence: • • Hammonton, N. J.

COMMUNICATIONS

To THE POULTRY KEEPER on business or in relation to articles or manuscript for publication MUST be addressed to

THE POULTRY KEEPER COMPANY,
Parkesburg, Chester Co., Pa.

ONLY twenty-five cents for this paper six months, on a trial trip.

MANSFIELD, Ohio, proposes to be on the list for a poultry show next season.

YOU can get any back number of this paper for five cents in postage stamps.

THE best poultry house depends on the amount of money one desires to invest in the house.

MARCH is the most dangerous month in the year for inviting diseases. Keep the ventilators closed.

IT is now suggested that a World's Fair Poultry Show be held in New York City in 1895. Just the thing.

THERE were more good birds at the New York show this year than at any time since shows have been held there.

DISINFECT and clear out the poultry house before summer. You cannot raise fowls and vermin on the same farm.

Fifty World's Fair views, the Farm and Fireside (semi-monthly), and the Poultry Keeper—all for fifty cents—the papers one year.

IF you do not get your paper, drop us a card, as it will not be *our* fault. We *want* you to get it as we wish you to subscribe again.

FEED young chicks often, about every two hours—but give only a small quantity at a time until evening, then give them a full meal.

THE advantages of the POULTRY KEEPER are that each issue is worth a whole year's subscription, and you must not miss a single number.

USE the pure breeds. Whenever a man begins to cross his pure breeds it is but a short while before he has a full crop of mongrels.

IT is claimed that more than 1000 birds were shown at the Sioux City, Iowa, show, and they propose to even beat that record next season.

MR. T. FARRER RACKHAM had charge of the Spatt's patent arrangements at the New York show. He is a necessity at all shows, and would be missed if not present.

IF you want a *pair* of poultry papers the POULTRY KEEPER and *Farm Poultry* pull together at seventy cents a year for both. Send us your order at once.

WE warn our readers to send no poultry or eggs to Ballard & Co., 3449 Cottage Grove avenue, Chicago, as we have sent them complaints which they did not notice.

NO one who has not used an incubator can well do justice to himself until he has operated one. Begin with a small incubator and then gradually extend the business.

THE show at Mt. Carmel, Ill., was one of the largest ever held there. There were over 100 Plymouth Rocks alone entered, and all breeds were well represented.

ONLY five cents a month for this paper. If you miss a single issue you may lose just the article you want.

MR. GEO. O. BROWN, Secretary of the American Poultry Association, reports that the new *Standard* will be ready about April 1st. Nearly all of the old ones are sold.

OUR new readers are informed that this paper is devoted exclusively to *poultry*. It is not a pigeon or dog paper, nor does it have a department for Maltese cats, guinea pigs, or white mice.

THE show at North Baltimore, Ohio, was a grand success. The display was not as large as was expected, but the birds were all choice. The judging was satisfactory, and all was pleasant.

DENVER had about 2,000 birds at her show, as we learn, and she thus takes rank as one of the leading cities for showing poultry. The breeders all work together out there.

THE poultry show at Knoxville, Tenn. in January, was very satisfactory for the first effort, and it is intended to be in the field again, as the first show was so encouraging.

THE poultry show at Atlanta is said to have been the best ever held in the South. Atlanta is a live city, and she always holds great fairs and expositions. We regret that we were unable to be there.

CHICAGO has an old and reliable commission house. We have known the Sprague Commission Co., 218 South Water street, for ten years, and they make a specialty of poultry of all kinds.

THE Scotia Poultry Association announced a show at Portsmouth, Ohio, Feb. 21st to 23rd, which was received too late for our February issue. They have some live breeders in that section.

WEST CHESTER, Pa., had quite an attractive show in January, which was a complete success, and it is claimed that over 900 birds were entered, which shows great interest, as they came from nearly all of the Middle States.

THE *American Stockkeeper*, Boston, is a *weekly* poultry, pigeon, and dog paper, at $1.00 per year. For $1.50 we send the *Stockkeeper*, the POULTRY KEEPER, *Farm and Fireside*, and fifty views of the World's Fair to one address.

THE poultry fanciers of Seymour, Conn., have commenced early, and organized a poultry and pet stock association. It starts off with 100 members, and will hold a show next winter, intending to have the largest in that State. Mr. F. E. Chamberlin is President, and Mr. G. J. Faber Secretary.

YOU can get fifty views of the World's Fair for one cent each and we will then throw in the POULTRY KEEPER and *Farm and Fireside* as good measure. Don't misunderstand us, for we send you the two papers one year, and send you the fifty views—*all* for fifty cents.

A SOCIETY for preventing cruelty to poultry could do much good. The sufferings endured by live poultry that are sent to market cannot be described. Killing the birds is also disgraceful and barbarous. They must be *bled* to death and "dry picked" before life is extinct. And this is a civilized country.

THE following are the newly elected officers of the Southern Ohio Poultry Association: President, Mart L. McCoy, Washington C. H.; Vice Presidents, Mr. O. S. Mallow, Washington, C. H.; J. L. Johnson, Sabina; G. D. Corlies, Atlanta; Granville Reed, Greenfield; Secretary, W. R. Dalbey, Washington, C. H.; Assistant Secretary, W. A. Shoults, Jr., Washington, C. H.; Trustees, B. R. Jacobs, Wilmington C. H.; C. C. Bentley, Sabina; James McLean, Washington, C. H.; J. B. Peelle, Bloomingburg; A. E. Mark, Selden; I. H. Carman, Selden; John Salmon, Madison Mills; Anderson Arnold, Washington, C. H.; W. L. Rockwell, Washington, C. H.; Chas. R. Dalbey, Washington, C. H.; John E. Hyer, Washington, C. H.; W. M. Baker, Lees Creek; F. M. McCoy, Washington, C. H.

MR. CUSHMAN, of the Rhode Island Experiment Station, took a deep interest in the exhibits at the New York show, and informed us that he had cut out a large amount of work for next season. Mr. Cushman is one of the valuable aids to the poultry industry, and we believe his labors will return thousands of dollars to his State and the whole country.

THE Chinese do not seem to reverence pure breeds as much as has been supposed. According to the consular reports it may be stated that in the Shanghai district the fowl that we know as Cochins and the Langshan are kept, as also a smaller fowl, but there are few who breed them pure, and little or no attention is paid to feathering or other points which our fancy breeders consider so important.

DUCKLINGS begin to sell high in May and prices keep up well until July. They sometimes bring thirty cents per pound, but twenty cents is about the average of the good prices. As ducklings are ready for market in less than three months after the eggs are first put in the incubators or under hens, they get into market very soon, as it requires four weeks for the eggs to hatch.

WE do not sell poultry, eggs, or any articles but books. Readers who send to us to buy articles for them simply give us work that is unnecessary, as we then have to look over the advertisements ourselves to find to whom to send. We have no list, and do not attend to any business outside of publishing the paper. We *do* aim to have reliable advertisers, however, though we are not always sure to escape some one who may be unknown to us.

THE Agricultural Department is said to have sent a "special agent" to Hammonton, N. J., to investigate poultry. We remember some one calling, who smoked a cigar and then left, without any *investigating*, and as he did not know a fowl from a full-rigged ship, we suppose that he is simply one of the *salary* appendages to the Department. He *wrote* something, however, as he *had* to do *that*, in order to report his *work*.

IT is said that Mr. W. P. Wheeler, of the New York Experiment Station, was anxious to have his wife also become interested in poultry. She *did so*, and now Mr. Wheeler himself is in a quandary, for Mrs. W. not only found pleasure in breeding fancy poultry, but sent over to England for the best in that country also, doing business for herself, and leaving Mr. Wheeler to look on. He says that she was the quickest and best pupil he ever had, and in the fancy to stay.

AT Chicago the poultry were placed in cattle sheds, where strangers could only find the location with difficulty. It was like walking in a stable to examine the birds. Everything at the World's Fair was considered important but poultry The managers did not recognize the show as worthy of more than notice. At New York the birds were shown in the handsomest structure that could be obtained for the purpose, the rent alone being enormous.

THE Kansas State Poultry association at its recent meeting elected the following officers for the ensuing year: President, M. L. Wortman, Winfield: Vice President, A Sheetz, North Topeka; Secretary, D. A. Wise, Topeka; Treasurer, T. H. Lesher. Topeka; Executive Committee, W. A. Roberts of Minneapolis, S. S. Robinson of Hazelton, John Haman of Topeka, E. A. Haslet of Atchison, and C. H. Rhodes of North Topeka. The dates for next year's show will be at the same time as the annual meeting of the State Board of Agriculture, which will be held some time in January.

A POINT FOR YOU.

Get some eggs this month, and get good stock. Raise your chicks and keep only the best. Next year you can advertise your stock and make it pay you something more than market prices. The cost of advertising is but a trifle, as only two sittings of eggs sold will pay for a two or three line advertisement for three months in the POULTRY KEEPER, and *everybody* takes it who is interested in poultry.

MENTIONINGS.

Mr. B. T. Bryant, Johnson's Creek, N. Y., won the lion's share of prizes on Polish at Rochester, and all the specials on White Crested Black and White Polish at the World's Fair. He also breeds Buff and Brown Leghorns and Light Brahmas.

Mr. A. L. Kunkel, Lisburn, Pa., has bred Barred Plymouth Rocks for the past ten years. He also furnishes eggs for incubators. His fowls are from selected strains.

Mr. John E. West, Columbia, Pa., makes a specialty of Indian Games, Plymouth Rocks and Black Langshans. He breeds only from the best, and keeps his stock full up to the requirements of the standard.

Miss Anna E. Brenuer, 722 York Road, Baltimore, Md., has some elegant Plymouth Rocks. She won five first prizes at Hagerstown, first at the recent great show at Atlanta, and first at the recent West Chester show.

Black Spanish and Mr. John Bennett, of Sunman, Ind., are names that go together. Uncle John has bred the Black Spanish, and nothing else, so long that some write his name "John Spanish." Some of his birds have scored over 97, and he has been breeding Black Spanish for thirty years.

Mr. Lee O. Vernier, Gilletts, Pa., breeds Buff Cochins, having procured his stock from choice birds exhibited at Elmira, and which are first-class.

Mr. H. C. Hunt, De'avan, Ill., is a breeder of Brown and White Leghorns, and he has always won wherever he has exhibited, and has won first at every show he has attended. Mr. Hunt is a breeder who has advertised with us for years.

Mr. S. T. Lantis, Markle, Ind., does not exhibit at shows, but he makes a specialty of choice Light Brahmas and Indian Games and has good stock.

Mr. O. G. Billian, Quarkertown, Pa., has White Plymouths, his cockerel scoring 94½ and his pullets averaging 94½, which he purchased from one of the leading breeders in the United States.

Mr. John A. Mohn, Fredericksburg, Pa., breeds White and Brown Leghorns, Indian Games and Black Minorcas, and does not show for fear of disease being contracted, his birds all being strong and vigorous. He has some fine specimens, however.

Mr. A. E. Holman, Hammonton, N. J., breeds Brown Leghorns and nothing else. He believes in keeping the one breed and giving it his whole attention, and has no other kind on his place. He has some of the best stock in the country, and prefers the Brown Leghorn to all others.

Mr. J. F. Clarke, Marrietta, Ga., keeps only Plymouth Rocks, and sells eggs of the best strains, and for incubators. Our Southern breeders will find him willing and reliable.

Mr. C. A. Snyder, Waynetown, Ind., breeds Black Langshans and pedigreed Light Brahmas, his Langshans scoring over 96 at Kokomo and his Light Brahmas winning first prizes on high scores.

Light Brahmas are the specialty of Mr. Alfred Doyle, Morgan Park, Ill. He is a veteran breeder and considers Light Brahmas the best fowls on earth. His Brahmas, are almost non-sitters, two of his hens now six years old, never offering to sit, and such is a characteristic of his stock. He never exhibits that he does not win.

The Improved Monitor Incubator is one of the standard machines, and with new improvements is now one of the best. It is made by Mr. A. F. Williams, Bristol, Ct., who has spent many years of his life in perfecting the machine. It is regulated by a solid rod, very sensitive to heat, and varies so little as to be almost perfect in regulation. The brooder made by Mr. Williams is also highly endorsed by hundreds.

The Excelsior Incubator, made by Mr. George H. Stahl, Quincy, Ill., is too well known to need further mention from us. It has been greatly improved recently.

The Page Safety Lamp, made by Mr. E. E. Page, Knoxville, Tenn., is offered as one of the best. It is very simple, and should be just the thing for incubators and brooders. We have one in use and find it excellent.

Messrs. George P. Pilling & Son, 115 South Eleventh street, Philadelphia, offer caponizing instruments for sale.

Mr. George Ertel, Quincy, Ill., offer their Victor Incubator as a candidate among the others.

Mr. Lewis Beatty, Washington, N. J., won some of the prizes on Buff Leghorns at the recent New York show, taking first and second on pullets and second on cockerels. He also won first on cockerel, Indian Games, and first and second on pullet. Quite a feat for New York.

Mr. Wm. N. French, New Haven, Vermont, was the originator of the famous White Wonder fowls, and he claims that they are ahead of all other breeds for combining eggs, market and hardiness. They are really good, as we have tried them and know.

The Peerless Incubator, made by H. M. Sheer & Bro., Quincy, Ill., is a new candidate for favor. They also manufacture a brooder.

Mr. C. C. Shoemaker, Freeport, Ill., advertises a large list of breeds, and issues a handsome catalogue.

"Bartlett's Poultry Foods" is the title of a neat little book sent free by Mr. C. A. Bartlett, Worcester, Mass. He also has a special meat and bone food for dogs. His "O. K." animal food is just the thing for chicks, and to make hens lay. We use a great deal of it ourselves, and can recommend it. He also sells ground beef scraps, steamed meat, green bone, cracked bone, bone meal, mica chrystal rock (ground,) ground fish, etc.

Mr. Evan H. Zoak, Glen Ellen, Iowa, breeds Plymouth Rocks, Buff Cochins and Pekin Ducks, and was one of the winners on his varieties at the recent big show at Sioux City.

Mr. S. L. Farrar, Bath, Maine, has won a pile of first prizes, and breeds Plymouth Rocks, Black and White Langshans, and Buff Cochins. At the Maine State Fair, and at other places, he cleaned out all competitors.

Mr. D. L. Stauffer, Spring City, Pa., won at Mt. Holly, Trenton, Doylestown, West Chester, Hagerstown and Pottstown, a cock scoring 96½. He breeds White Plymouth Rocks.

Indian Games are bred by Mr. T. A. Richardson, Hagerstown, Md., and he thinks them equal to any breed.

White Wyandottes are the favorites of Mr. H. W. Colburn, S. Lancaster, Mass.

Mr. J. R. Ernst, York, Pa., breeds Plymouth Rocks, Brown Leghorns and Black Minorcas, and breeds them up to high class, his stock being from the best to be procured.

Buff, Silver, Golden and White Wyandottes, Plymouth Rocks, Rose and Single-comb Black Minorcas, Brown Leghorns, Black Spanish, and nearly all kinds of Polish, are bred by Mr. W. E. Greenman, Triangle, N. Y. He has won at Binghampton and other shows.

Mr. A. C. Hawkins, Lancaster, Mass., has been a breeder since 1876, and has won at all the leading shows, such as New York, Boston, Buffalo, Worcester and other points. He has won on Plymouth Rocks for years, as well as on his White Plymouth Rocks, Silver Wyandottes and White Wyandottes. Nearly all the leading breeders have gotten their start from his yards.

Mr. W. W. Shampanore, Little Silver, N. J., has bred Black Minorcas for a number of years. He also has fine Plymouth Rocks, Buff Leghorns, White Wyandottes, Langshans, White Leghorns, Buff Cochins and Pekin Ducks.

Mr. J. H. Hallack, Cuba, N. Y., breeds White Leghorns, and nothing else. His stock is from the best in the country, selected from laying strains, and he makes them a specialty.

Mr. N. E. Woods, Packsburg, Indiana, breeds Light Brahmas and Plymouth Rocks. Also Cotswold and Shropshire sheep. Mr. Woods has won wherever he has shown, getting high scores at Indianapolis with strong competition.

Mr. F. R. Cutting, Waters, Mich., breeds Rose-comb Brown Leghorns, and though he does not exhibit, yet his customers last year were full of praise for his stock received by them.

Mr. Elmer K. Clemmer, Harleysville, Pa., breeds Houdans, Langshans, White Leghorns and Black Minorcas, and uses only the best stock from leading sources.

Mr. A. G. Clemmer, Norwood, Pa., breeds White Minorcas, Black Minorcas, White Leghorns, Brown Leghorns, White Plymouth Rocks, Barred Plymouth Rocks, Golden Wyandottes and Buff Leghorns. He does not exhibit, but has excellent stock, each breed having a large space for foraging.

Mr. Geo. I. Buell, Lorain, Ohio, breeds Black-breasted Red Games, Red Pile Games and Indian Games, and he has won on them wherever shown.

Mr. Wilson Terry breeds Single-comb Brown Leghorns, and makes them his specialty. He does not exhibit, but his birds are from the best strains of prize winning stock.

Mr. Wm. J. Burress, Summerville, Pa., breeds Buff Cochins and Leghorns, and keeps his stock up to the best by procuring choice birds from leading strains every season.

Pit Games—beats all for the table. Mr. Ide Rossiter, Girard, Pa., has the celebrated Lord Derby Game (terrible fighters, too, if anyone likes pugnacity) and the Aseels, Japs, Surrey Tassels and Japs. Although Mr. Rossiter will breed only games noted for their courage, yet he keeps them also because he claims that no one knows what "good chicken" is until they have eaten the Pit Game.

The "Pleasure Poultry Yards," Marysville, Pa., make specialties of Brown Leghorns, Indian Games, Plymouth Rocks and Black Minorcas, and aim to have choice stock.

Mr. Wm. S. Foley, Morris, Ill., breeds Cochins, Langshans, Wyandottes, Plymouth Rocks, Hamburgs, Black Javas, Bronze turkeys and Pekin ducks.

Mr. S. Whipple, Oakville, Mich., breeds Plymouth Rocks and Brown Leghorns, of stock procured from the best strains, and which he keeps full up to quality.

Mr. D. L. Long, New Martinsville, W. Va., says Pit Games, which are his favorites, beat all breeds. He has seen one of his hens kill a rat that attacked her brood, and another followed a rat for fifteen feet rescuing her chick. They will fight a hawk also. Mr. Long says persons make a mistake in not giving some attention to Pit Games on the farm.

The Surprise Incubator Poultry Yard, East Billerica, Mass., are perfecting their incubator, and they think they have one of the best.

Mr. Christian Sehman, Doylestown, Pa., breeds Barred and White Plymouth Rocks, Golden and Silver Wyandottes, Homing pigeons, Belgian hares and Guinea pigs. He won in all his classes at Doylestown, and also special prizes at Trenton, Lancaster and Bethlehem, at some shows making a clean sweep. He has also won on Indian Games wherever shown.

The Famous Manufacturing Co., Chicago, make the Champion incubator and brooder, large numbers of which are now in use. They offer a free catalogue to all who so desire.

Mr. C. C. Craver, York, Pa., breeds from nothing but the best and most vigorous stock, selected for their laying qualities, always adding, regardless of expense, any bird that will be an improvement to his yards. He breeds Single-comb Brown Leghorns, Black Minorcas and Light Brahmas.

The Hydo-Safety Lamp, made by Mr. L. R. Oakes, Bloomington, Indiana, is something that should be tried to be appreciated. We have one, and would not take ten times its cost if we could not get another. It is what all should have who run incubators and brooders.

Mr. C. H. Wyckoff, Groton, N. York, breeds White Leghorns exclusively, and they have a range of 60 acres. His Leghorns are famous as layers, and he makes eggs pay, having hundreds of them. He does not exhibit, but sells to his customers for that purpose. His birds are noted for hardiness, vigor and egg-production.

Mr. Oscar G. Billian, Quakertown, Pa., has the Ottocco "dark egg" strain of Plymouth Rocks, and he has bred Polish for 18 years. He does not exhibit, but his stock is kept up to all that it should be.

Mr. L. E. Crumbling, Hall, Pa., is a breeder of Black Minorcas, Indian Games and Buff Leghorns, and also has started with a few White Indian Games. His birds have won at some of the leading shows, and he breeds for size and vigor. He breeds from the best birds to be had in the country, and is improving every season.

Mr. W. W. Kulp, Pottstown, Pa., was one of the winners at West Chester. Mr. Kulp breeds Rose-comb Brown Leghorns and White Plymouth Rocks, and also makes a specialty of Light Brahmas, Plymouth Rocks and other breeds. He is an old breeder, and has cleaned out the prizes at some shows.

For galvanized wire netting read the advertisement of Messrs. Pester Duryee & Co., 215 Greenwich St., New York City.

Bone and shells are sold by the Fitch Fertilizer Works, Bay City, Mich., raw bone being a specialty with them.

Messrs. C. A. Sharp & Co., Lockport, N. Y., were the original importers of the "Agitator" strain of Indian Games, bred especially for utility. They also originated White Indian Games. They also breed Red Caps, Buff Plymouth Rocks, Golden Wyandottes, Crevecouers, Black Minorcas, Aseels and White Leghorns, and have won at all the leading shows.

The Monarch Incubator, made by Mr. James Rankin, has a reputation unsurpassed. He is the veteran in his line, and has won at all the shows he ever attended. At Boston he was prevented from competing, as he could not be beaten. He won at 27 consecutive shows. Mr. Rankin is one of the most honorable men in the business, and has hatched and raised as many as 10,000 chicks and ducklings in a single season.

The Harvey Seed Co., Buffalo, N. York, keep all kinds of poultry supplies, and can furnish anything that is wanted by poultrymen.

Thermometers are made a specialty by Mr. W. A. Wooldridge, Gifford, Ill. See his advertisement.

Mr. Stephen Spencer, Morris Plains, N. Jersey, had some of the finest Light Brahmas at the New York Show we ever saw, and he makes that breed his specialty. He has won in many shows, and his exhibit at the great Madison Square Garden Show, New York City, was one of the best to be seen.

Mr. L. W. Lighty, East Berlin, Pa., is a breeder of Rose-comb White Leghorns, Black Minorcas, Light Brahmas, White Wyandottes and Pekin Ducks. His favorites are the Rose-comb White Leghorns, which he has bred for years.

Mr. Geo. H. Northup, Raceville, N. Y., is an importer, exporter, and breeder of Black Minorcas, and is the originator of Rose-comb Black Minorcas. He does not exhibit, as many exhibitors procure their birds from him. Mr. Northup stands very high as the "headquarters" for Black Minorcas.

If you want roofing you can get the best from A. F. Swan, 38 Dey street, New York City, who makes the celebrated "Standard" roofing. We know all about his goods, and have used them. Mr. Swan has been in the business for years.

Mr. James H. Helms, Centreville, Indiana, breeds Indian Games, Plymouth Rocks, Black Leghorns, Bronze turkeys and ferrets.

[Continued in Next Issue.]

NEW YORK SHOW.

The awards had not been given when we left except partially. That it was a grand show, and contained the best birds ever brought together, was admitted by all.

Spratt's Patent did the "fixing up" of the show, Mr. T. Farrer Rackham doing the work.

Mr. H. V. Crawford, the Secretary and Superintendent, showed himself not only capable, but was highly complimented on all sides for his gentlemanly treatment of exhibitors, and for the arrangements.

The weather was very unfavorable, but the show was well attended.

A full description of the show is crowded out. Electric lights made the great Madison Square Garden hall appear bright and light at night, and the birds were healthy and comfortable.

Incubators, brooders, large displays of eggs, dressed carcasses, bone mills and all the appliances were exhibited.

There were fourteen judges of poultry and five judges of pigeons.

The Light Brahmas of Stephen Spencer, Morris Plains, N. Y.; C. M. Griffing, Shelter Island, N. Y., and the Orr's Mills Poultry Yards, Orr's Mills, N. Y., were very choice. The latter also displayed some fin Plymouth Rocks.

The Buff Plymouth Rocks were out in force, James Forsyth, Owego, N. Y., having some fine birds, making an excellent display in Buff Wyandottes, White Wyandottes, Brown Leghorns and other breeds.

Black Javas were very good, R. W. Davison, Glendola, N. Jersey, showing some splendid birds.

Dr. John W. King, Kent, Conn., exhibited some of the finest White Leghorns in the show. W. W. Kulp, Pottstown, Pa., showed well in Brown Leghorns.

In Buff Leghorns, Augustus D. Arnold, Dillsburg, Pa., Davis Bros., Washington, N. J.; Mr. Wm. P. Wheeler, Geneva, N. Y.; Geo. W. Raudolph, Palmyra, N. Y., and Lewis C. Beatty, Washington, N. J., showed fine specimens.

In Indian Games C. A. Sharp & Co., Lockport, N. Y., showed good birds as also did R. W. Davison, Glendola, N. J. The former also exhibited White Indian Games. Mr. W. P. Wheeler, of the New York Experiment Station, made a large display of capons, which attracted the attention of all who saw them.

Will C. House, Fort Plain, N. Y., and L. H. Meyers, Bethlehem Centre, N. Y., exhibited dressed carcasses, eggs, broilers, etc.

Dr. W. A. Conklin, 187th street and 10th avenue, New York city, exhibited swans, prairie dogs, peafowls, ornamental fowls, etc.

For good birds this show eclipsed anything of the kind ever before held there, and it shows that there is as much interest as ever in the great shows at New York.

The pigeon department was well filled, and contained some beautiful specimens.

The fanciers from over the whole country were there, nearly every State being represented.

The officers were all courteous and obliging, which made the affair pleasant to all.

It was worth a visit to see the display of coops alone, as the building occupies a square of ground.

If New York has a show next year we advise our readers to endeavor to be there. It is one of the great sights worth seeing.

Mr. Charles F. Newman, Huguenot, Staten Island, New York, won some of the prizes on Pekin Ducks, also on White Turkeys, White Wyandottes and White Plymouth Rocks.

EGGS ARE CASH.

Whenever money is slow the hens keep at work daily, bringing in the cash. One must wait a whole year to secure a crop, and it takes a calf or a colt several years to reach the market, but the old hen pays up her dues every day, and does not keep you waiting. The man who takes hold of poultry on the farm, and does not leave it to the "women folks," will find more money in it than he supposed.

A FREE GIFT

To Our Subscribers:

50 Photographic Views OF THE World's Fair.

$25 Worth of Intantaneous Photographic Views.

The achievements in Mechanics, in Architecture, in Art and in Science of that great event, with all its marvelous Exhibits, Scenes and Surroundings, which produced the sublime spectacle, has passed away, but, thanks to photography, it yet lives for the entertainment and edification of the multitudes and for posterity in a realistic and

Magnificent Panorama OF THE World's Fair,

Showing pictures of grand Buildings, of glittering Domes, of massive Arches, of noble Statuary, of jetting Fountains, of beautiful Interior Exhibits, of Venetian Gondolas, gliding over the deep Lagoons, of Pavilions, of Foreign Villages, of Cafes, of the Wooded Island, and many other attractions of the Dream City and

THE FAMOUS MIDWAY PLAISANCE, THE BAZAAR OF NATIONS, OR THE SIDE-SHOW OF THE WORLD'S FAIR.

The Greatest Achievement of the Age

On the shore of Lake Michigan, from May 1st to October 30th, 1893, stood the Magic City—the Dream City—that caused the whole world to halt and gaze in wonder and amazement. This was the crowning event in America's history of 400 years. Every nation, from "Greenland's Icy Mountains to India's Coral Strand," from darkest Africa to the islands of the sea, poured forth their riches as tribute to the World's Columbian Exposition, that it should be the most marvelous display of ancient and modern times. All that the brain of man and woman had conceived, that human skill could execute, was there. Among these was the largest building in the world, largest engine in the world, most powerful electrical machinery in the world, fastest train in the world, greatest cannon in the world, strongest searchlight in the world, highest wheel in the world, most extensive collection of paintings in the world, and a thousand and one other greatest things were there within an area of 633 acres, of which 250 acres were covered with buildings that alone cost Twenty three Million Dollars. All this wealth of the earth and genius of mind was concentrated there to exemplify the imperial glories of our nation. Only the spirit and the pictures of this, the eighth and greatest wonder of the world, remain with us. The spirit will make our nation greater and all humanity better, while the pictures wake a pictorial history that will tell the story to all the children of men.

THOSE WHO WENT TO THE FAIR will live again, in these pictures and accompanying descriptions, the delights they experienced on that memorable trip to the Fair. They are sure to exclaim, "Why, it seems as though I am right there!"

THOSE WHO DID NOT GO will find in them a source of great delight and education. With such pictures and descriptions they can yet visit the Fair in all its glory. Parents should secure this beautiful pictorial history for their children.

A Partial List of the Views.

Court of Honor. This is considered the most majestic scene that has ever been wrought by the hands of men.
Columbus' Caravals. Exact reproductions of the Santa Maria, Nina and Pinta ships, in which Columbus sailed in his discovery of America.
The Ferris Wheel. The highest wheel in the world, and one of the mechanical wonders of this age.
Battle Ship Illinois. An exact reproduction of one of America's finest war vessels, fully equipped.
California State Building. Cost $75,000, and next to the largest state building.
John Bull Locomotive. The oldest successful railroad locomotive in America.
Manufacturers' Building. The largest building in the world, which cost $1,700,000 and had nearly 44 acres of floor space.
Administration Building. Cost $550,000, and considered the architectural gem of the Fair.
Woman's Building. Cost $138,000, and was devoted exclusively to woman's work.
Statue of the Republic. By French. The statue is 65 feet tall, and required nearly $4,000 worth of gold leaf to cover it.
Irish Village. Reproduction of a typical village in Ireland, and one of the greatest attractions on the Midway.
Cliff Dwellers. A reproduction of the homes of that curious race of Indians.
Palace Mechanical Arts. Cost $1,200,000; was 850 feet long and 500 feet broad.
Ostrich Farm. An exhibit of live ostriches.
Interior Manufacturers' Building.
Interior Government Building.
Number of State Buildings, Etc.

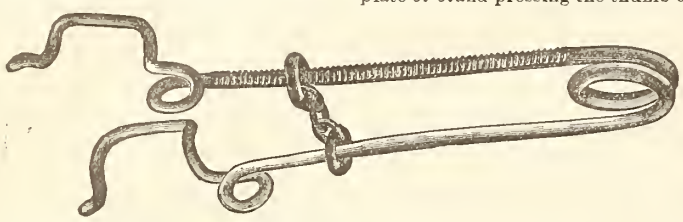
READ OUR WONDERFUL OFFER.

We will give the 50 Photographic Views described above, also the *Farm and Fireside* one year, and THE POULTRY KEEPER one year, all three for fifty cents to new subscribers only. Persons already having subscribed for THE POULTRY KEEPER will have to send a new subscriber and have the Premiums sent to themselves, as the three will only be sent for this price when ordered all at the same time. Subscriptions of this kind will not count on any other premium. This is a *hard times* offer. Don't neglect it. *Farm and Fireside* will come twice a month. Address POULTRY KEEPER CO., Parkesburg, Pa.

CAPONIZING INSTRUMENTS.

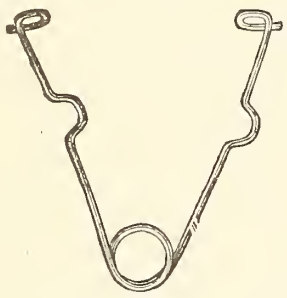
In this issue we propose to show our readers the various instruments used for caponizing, the illustrations being from Mr. W. H. Wigmore, 107 South Eighth street, Philadelphia. Mr. Wigmore is a surgical instrument maker, and has for years devoted much of his time to the improvement of the instruments for caponizing. Nearly all of the leading operators are supplied by him, and as he is also an expert breeder and poultryman, he knows what is required. Through his efforts caponizing has been rendered simple, and what was once considered very difficult is now better understood. His prices are also low, owing to the greater simplicity of his instruments.

Our object here is to show and explain the various instruments, and we suggest that our readers preserve this issue for future reference, as it may serve as a guide in caponizing the different kinds:



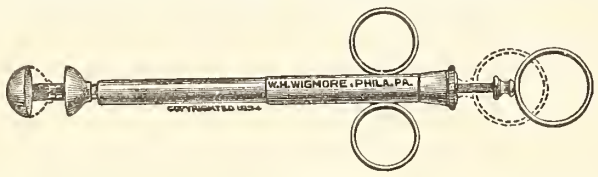
NO. 1.

No. 1.—Improved Capon Spreader, the best ever used for the purpose and very simple.



NO. 2.

No. 2.—Old-fashioned Capon Spreader, recommended by some who know little or nothing about caponizing. While working with it, it will fly out and you are liable to find it ten feet away just at a critical moment.

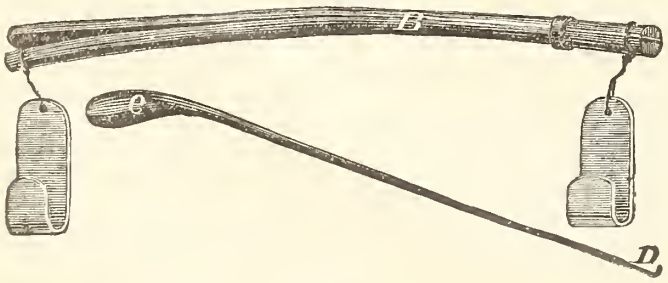


NO. 3.

NO. 4.

No. 3.—Improved Spring Cup Capon Forceps. This instrument is doing excellent work, it is strong and a very handy instrument. It is the instrument now used for performing the operation instantly and painlessly.

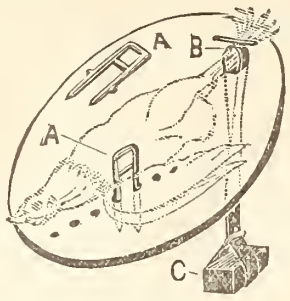
NO. 5.



NOS. 6, 7.

No. 4.—Mr. Samuel Cushman's Improved Chinese Spoon and Hook. Mr Cushman spared no time or expense to bring this instrument to perfection. Mr. Wigmore made him six or eight before he got just what he called perfect. He made Mr. Cushman quite a number of tools beside these. Mr. Cushman is in charge of the Rhode Island Experiment Station, poultry department, and our readers are familiar with his experiments, as we have given them in the POULTRY KEEPER previously.

NO. 8.



NO. 13.

No. 5.—Wigmore's Improved Steel Wire Capon Canula. Its use is as follows: By catching the first and second finger or plate *b. b.* and pressing the thumb on *a.* the wire will come forth in a loop (shape *c.*) ready for receiving or slipping over the parts, and on removing the thumb it will return to its first position, holding the spermatic cord firmly between the wire and the end of the canula. This tool is highly recommended.

No. 6.—Old-style Chinese Whalebone Spreader. This instrument has been used by the Chinese for centuries.

No. 7.—Old-style Chinese Capon Spoon and Hook, etc., which is also very old.

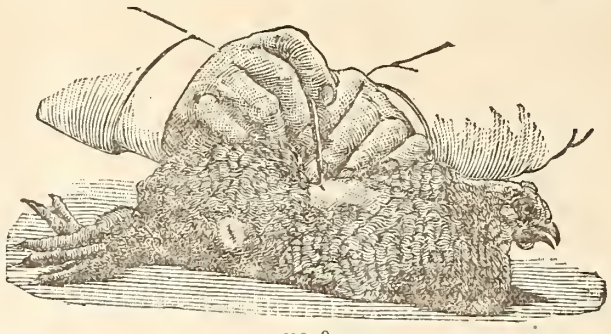
No. 8.—Old-style Chinese Horse-hair Canula, etc., perhaps known for a century or more.

No. 9.—Showing bird in position ready to caponize. The modern method of cutting is to STAB right between the first and second ribs within one-and-a-half inches of the backbone, with the edge of the knife from you, then cut forward for one-and-a-half inches. The old way was to cut drawing the knife toward you, making several cuts before getting through the ribs, and with a restless bird receiving considerable hacking and suffering.

No. 10.—Improved Chinese Horse-hair Canula. It is recess out at the end just enough to allow the horse hair to fit the grove, freely coming out against the abutment, the horse hair or wire being ready to be pushed forward after each amputation.

No. 11.—Shaw's No. 6 or Improved Chinese Set. This set contains no superfluous instruments, each and every one being well suited for the purpose.

No. 12.—This cut shows the method of holding birds with cord and weights.



NO. 9.

No. 13.—This shows staples for holding birds. This cut also shows how a good caponizing board can be made by using improved staple *A* to slide over the bird's wings, with two lugs on, about one inch from the points, to prevent forcing the wings too close together, which would be the case without them. The bar crossing the staple in the middle enables you to use the upper part for a handle. One point is longer than the other, to make its introduction into the board much easier. With seven holes in the board it will take any size bird. *B* is a strap loop, with a pin across the top, to prevent the strap from falling through the board when not in use. At the other end of the strap is a weight (*c*) for keep the feet down.

No. 14.—Improved Gapes exterminator. It is needless to suggest the use of so simple a device, other than to point out to the novice the necessity of introducing the instrument into the windpipe at the base of the tongue instead of the throat. By holding the patient in a position that the neck will be straight, giving the instrument a few quick turns, it will be found, on withdrawing it from the windpipe, that the worms have become entangled in the wire. If the afflicted bird is very small, lessen the width of the instrument by pressing between the fingers. A few minutes are all that is required to learn to operate the machine entirely successfully.

NO. 11.

NO. 18.

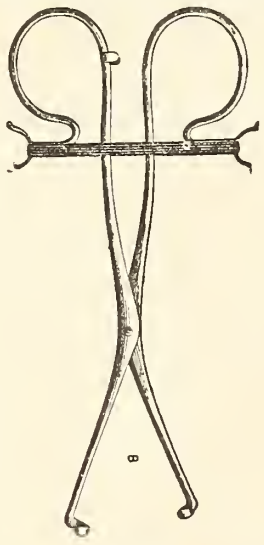
NO. 10.

NO. 19.

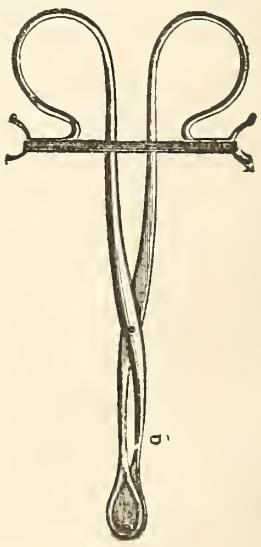
NO. 14.

No. 15.—Shows No. 6 set Steel Wire Caponizing Canula. It is given for comparison, though in use by many.

No. 16.—Shows the Farmer Miles Capon Spreader which is given for comparison.



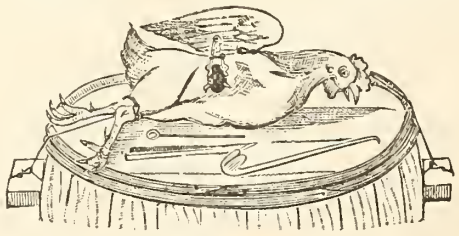
NO. 16.



NO. 17.

No. 17.—Shows the Farmer Miles Capon Forceps, also given for comparison.

No. 18.—Shows Cords and Hooks, and No. 19 a Capon Knife and Forceps combined.



NO. 12.

We have not attempted to describe the *method* of caponizing in this issue, our ob-

NO. 15.

ject being to show some of the old and new instruments Our January, 1887, issue contains birds photographed and in the various positions (as in No. 9 above), and full details are given. Our March, 1892, is also a *capon issue*, and gives prices for the whole year, and how to manage. As any back number can be had for five cents in stamps it will pay our readers to send for those two numbers and, they will then have a *whole book* much better than can be bought for several dollars.

Any description desired that is not given here can be procured of Mr. Wigmore direct, as he has willingly agreed with us to assist any of our readers who will write him. He is the pioneer maker of improved caponizing instruments, and we value his experience highly.

SPLIT NUT FEED HANDLE..

The split nut feed handle for green bone cutters here represented, and about which there is so much talk among bone cutter manufacturers, was invented for the Mann bone cutter about three years before the advent of any other bone cutter in the country, and used continuously on their power machines ever since that time. Besides this prior use of nearly three years the F. W. Mann Company hold patents on this valuable device in combination with a cylinder and cutter plate dating back six years prior to any other bone cutter invention. All other manufacturers of bone cutters using this special mechanism have been notified through their lawyers that the F. W. Mann Company hold said patents covering this valuable feeding device for bone cutters, and said manufacturers have no right whatever to claim that the Mann Bone Cutter infringes upon them.

We have been at the F. W. Mann Company's factory and have seen this split nut device which has been used on all their power machines since the Mann Cutter was first invented. No one buying a Mann Bone Cutter need have any fears that it is infringing in any way upon other bone cutters, all of which came upon the market several years later.

We will state, however, that, so far as our knowledge of *patents* is concerned, we know nothing except the *claims* as presented to us, and the Mann patent has been sent us for examination. As stated, we have also seen the device. So far as taking any part in the respective claims and rivalries we are not interested. We regret that any allusion of ours was such as to call for an explanation, and we believe that bone cutters have come to stay, with a large field open for their manufacture. Those who have used bone cutters would not do without them, and each manufacturer will aim to improve every year.

A BAD SHOWING.

A Californian, Mrs. W. Bain, says that she only gets ten or eleven eggs a day from eighty hens. The lady explains how she feeds. We give her letter to explain a point. She says:

I get only ten or eleven eggs a day. My hens seem healthy; their combs are red, but they don't lay well. I feed them two gallons soft feed one morning and the next two gallons of cut bone. At night I give one gallon of grain, either wheat or oats. They get plenty of alfalfa for green feed. Do I feed them too much, or not enough? They are always hungry, but do not rustle very much, and wait to be fed. I have eighty hens.

She says that her hens are always hungry, and do not rustle. If they were really hungry they would be out in the splendid alfalfa, and would not care a fig for her. But she has fed them too liberally, and has taught them that it is waste time to seek food when all they have to do is walk up and receive. It is not hunger that brings them to her, but *habit*. They have a good time—no work, no hardships, and plenty in abundance. They are as fat as pigs, and will never lay under such treatment. Turn them out, feed nothing, and starve them down. Let them find out that they must seek food and they will cost less, lay more eggs, and give up their lazy habits.

MR. CHALFANTS HOUDANS.

Houdans are a French breed, and are very much like the Dorkings in shape and quality of flesh. They also have the five toes like the Dorking. The hens are non-sitters, and lay large white eggs. They are regarded by the French people as the best of all table fowls, and have been the hardiest of all the French breeds that have been imported into this country. They are a specialty with Mr. G. E. Chalfant, Hammonton, N. J., his stock being imported direct from France. They mature early, and when crossed with Plymouth Rocks the finest kind of broiler is produced, and the cross also makes grand capons. Mr. Chalfant has one of the largest broiler houses in Hammonton, and he does not make a "side business" of it, as he has a ten-acre farm, and devotes his entire time to breeding and raising broilers and pure bred poultry for market as well as for exhibition purposes. He has at present, in his laying house, 115 hens, consisting of imported Houdans and Barred and White Plymouth Rocks. His broiler house has a capacity of 1,200 broilers every ten weeks. He has been in the business for several years, and is reliable, being one of the most respectable citizens of his town and takes pleasure in keeping only the best.

ARE THEY FRAUDS?

A few months ago an advertisement of M. E. Ballard & Co., 3449 Cottage Grove avenue, Chicago, appeared in the POULTRY KEEPER, we supposing them reliable. We received several complaints, and notified them, to which they made no reply. Among those who shipped to them was Mr. H. H. Bloomenshine, Flanagan, Ill., who sent us the following letter:

"I desire to warn my brother readers of the POULTRY KEEPER not to ship Ballard and Co., 3449 Cottage Grove Ave., Chicago, Ill., anything, as I consider them dishonest in business. A neighbor and myself shipped them over 300 pounds of dressed poultry for the Thanksgiving trade, and they did not pay us a cent, neither did they give us any satisfaction that they ever would pay."

The above is plain, for they received the goods, hence there could be no mistake in the address of the house. Mr. Henry Stauffer, Centreville, Indiana, is also another victim and he wrote to the Sprague Commission Co., 218 South Water street, Chicago, (a reliable house) to investigate. The following is Mr. Stauffer's letter:

Having received your cards, and thinking you reliable, we would like to consult you again concerning Ballard & Co. We can get no word from them. They have sent their advertisement to P. H. Jacob's POULTRY KEEPER, the November issue, and we enclose it herewith. They advertise under one name and receive goods under another, but all have the same address, 3449 Cottage Grove Ave. M. E. Ballard, 3449 Cottage Grove Ave., was the one we wrote to., H. P. Ballard was the one that answered and that we shipped to. We got their address in the POULTRY KEEPER. We will have to write to Mr. Jacobs and have them exposed if they don't show up soon. It will not be a good recommendation for Chicago commission men, but it is the only way to protect others. Now, we would like to know if you will undertake to *see M. E. Ballard. Be sure it is M. E. Ballard*, for we think this H. P. Ballard a *fraud*, and think he is on the lookout for any mail from this place, as we wrote to M. E. Ballard and received no answer. Will you see him and tell him about our goods we shipped, and collect the money due for the same? We are willing to allow you commission for it, whatever you think right and all goods we have to ship we will not forget you. Should you not be willing to aid us, will you kindly tell us what course to pursue? Should you do so we have the express receipts and the letter that was written telling of the arrival of the chicks, we will be greatly obliged.

Mr. P. H. Sprague, of the Sprague Commission House, endeavored to hunt up Ballard, and here is his report of the attempt:

"I took the trouble to go down to see this man Ballard, and find that there is no such party there. No. 3449 is a tailor shop, and they do not know anything about Ballard."

If any of our readers have been victimized by Ballard they should mark this street, put it in an envelope, and direct it to "Postoffice Inspector," Chicago, Ill. If Ballard is using the mails unlawfully the United States Government will put him behind the bars, as he has victimized those who consigned to him not only with a false address but by receiving goods under false pretences. In the meantime we regret that we were not aware of his character, and take this method of giving the facts as were presented above.

PAIR OF HOUDANS, FROM G. E. CHALFANT, HAMMONTON, N. J.

BOOKS FOR FIVE CENTS EACH.

The following are *special subjects*, and though they are *back numbers*, yet each is worth a year's subscription.

You cannot get a high-priced book that will give so much on the subject selected.

Any of the following for only *five cents in stamps*:

Testing Eggs, (illustrated.) August, 1885, Sept., 1890; June, 1891. and June, 1892, the latter full of illustrations

Plymouth Rocks, (description). Preserving Eggs. Sept., 1885.

Buff Cochins, (description) Oct., 1885.

Rouen Ducks, (description). Dakin's Brooder. Dec., 1885.

How to Ship Poultry. Toulouse Geese (description). Sept., 1886.

Plan of a Broiler House. Breeds of Ducks. The West Chester Gape and Roup Cure. Oct., 1886.

All About Roup, eight columns. Nov., 1886.

All About Cholera, seven columns. Dec., 1886.

Testing Eggs, by Campbell, three columns. Dec., 1886, and Jan., 1887.

Caponizing (illustrated). Jan., 1887, and March, 1892.

Gapes, four columns. March, 1887.

All About Turkeys, seven columns. March, 1892.

How to Make the Hot Water Incubator, (illustrated). French Mode of Cramming Fowls. Mrs Moore's Egg Preserving Recipe. Why Chicks Die in the Shells. July, 1887.

All About Preserving Eggs, six columns. An Egg Turner. Harris' Poultry House. Sept., 1887

All About Lice (illustrated). Oct., 1887, and Dec., 1891. The latter shows the kinds of lice, magnified.

Poultry Diseases. Crop-Bound. Egg Bound Feather Pulling. Soft-Shell Eggs. Hens Eating Eggs. Bumble Foot, Scabby Legs, Worms (six columns on diseases). A Big Egg Farm (prices). Nov., 1887.

An Incubator Regulator. Plans of Incubators and Brooders. Dorkings. December, 1887.

Making Condition Powders. Points for Pasting Up. How to raise Ducks. Shipping and Dressing Poultry for Chicago. January, 1888.

How much Feed to Give. Poultry House Floors. Lee's $10 House. A Cheap Tank for Incubator. A Cheap Egg Tester. June, 1888.

Prices for the whole year, two years given, and prices of all kinds of poultry for every week in the year, for New York and Chicago. Feb., 1888. Also April, 1892.

Poultry Houses. April, 1887; Oct., 1888, and July, 1891. Fifty illustrations.

All About Ducks, five columns. Maj. Jordan's Hot Water System. August, 1888, and Dec., 1892.

The Hen and the Food. July, 1888.

Fertilization of Eggs, five columns. The Ferrett Feeding for Eggs. Sept., 1888.

Description of Breeds—Light Brahmas, Plymouth Rocks, Pile Leghorns, Langshans, Houdans, and Brown Leghorns. Five columns. How to Place the Thermometer, (illustrated.) Nov., 1888.

Shipping Poultry to Market—all about it. Dec., 1888.

How to Feed for Eggs. How much to Feed. The Kinds of Food. Condition Powders. A Whole Book in a Small Compass. Nearly eight columns on Feeding, with tables and proportions. Oct. 1891.

The Bronze Turkey (description). More About Feeding. Preserving Eggs with Cold Air, Bees-wax, and Paraffine, Feb., 1889.

Shipping Coops, (illustrated). The *Farm Journal* Hot Water Brooder. Mar., 1889.

Young Turkeys. All About Geese. Pigeons for Profit. Mating Plymouth Rocks. Preserving Eggs. Partridge Cochins. Eleven Reasons Why Eggs Do Not Hatch. July, 1889.

Brooders, Incubators, Appliances, Poultry Houses, etc., (many illustrations). Aug. 1889, and Aug., 1891. These two books are worth $10.

Points on Raising Broilers (forty-two rules). Everybody should have this. Clover Hay as Food (illustrating the cutter). The Wyandotte. Fertilization of Eggs. Scoring Games. Oct. 1889.

The Ventilator discussion. Dec., 1889, and the "Principles of Ventilation," in March, 1890.

Rudd's Hot Water System. May, 1890. Two pages (illustrated).

Rankin's Great Duck Farm, (illustrated). July, 1890.

Science of incubation, by Hock, two pages. Oct. 1890.

Artificial Incubation in Egypt, (illustrated). Dec., 1890.

Spongia as a Roup Cure—four columns. Jan., 1891.

A Whole Library of Points. A grand issue. Aug., 1892.

Points on Hatching Broilers. A whole library on how to hatch. It is worth $50. Oct., 1892.

Incubator Appliances. Illustrations of nests, troughs, novelties, etc. Full of illustrations. Sept., 1891.

Each one of the above issues contains other valuable information also. The subjects named are the *leading* articles.

The reader should keep this for reference. It will save much time inquiring for special articles.

The issue on Poultry Houses, Brooders, Appliances. Feeding for Eggs, Caponizing, Prices for the Whole Year, Preserving Eggs, Turkeys, Points on Hatching, Points on Raising Broilers, Testing Eggs, and some others, are worth fifty times the price, as there is no book published that can even compete with a single number.

ONE OF THOSE AILMENTS.

When one of the hens happens to die suddenly there is a natural curiosity to learn the cause. A case which may interest many is mentioned by Mr. J. A. Carswell, Penhold, Canada, who describes the difficulty as follows:

Several of our hens have died under peculiar circumstances. They mope around, droop, and in a day or two die. We dissected them, and found in one the liver as big as a large apple, while the others had the same organ much enlarged. We have fed them as much as possible, after the formulas laid down in the POULTRY KEEPER. Can you give me a reason for the disease?

The cause of the enlargement of the liver is probably due to over-feeding, but many such cases have been known to occur from the use of condition powders that contain antimony, copperas, and other minerals. There is no remedy to suggest but to reduce the grain ration, and compel the hens to scratch and exercise. Whenever a hen droops, however, she should be at once removed from the male, as many sudden deaths may be avoided by so doing, injury thereby being prevented.

AN ALL-PURPOSE MEDICINE.

There is really no all-purpose medicine, but, to avoid keeping a lot of vials and mixtures, every poultryman should have a bottle of the following mixture: Crude petroleum, one gill; kerosene oil, two gills; lard oil, one gill; glycerine, one gill: add a teaspoonful of liquid carbolic acid. Shake well always before using. Rubbed on the legs of fowls once a week, it will destroy scaly leg. Two drops in each nostril, and the throat swabbed with it, using a feather for that purpose, it is excellent for roup, if applied twice a day. Half a teaspoonful once a day is a fair remedy for cholera. It also kills lice instantly. A teaspoonful in the soft food of a dozen fowls is excellent when roup or cholera is in the entire flock.

ROSE-COMB BLACK MINORCAS. THEO. CAMPBELL, Lexington, Ky.

BUFF LEGHORNS. Arnold's strain, eggs $2 per 15; S. C. W. Leg's, $1 per 15. T. J. Bennett Ol tion, Pa.

Light Brahmas. W and B. P. Rocks, and W. Guineas. Mrs P. L. Parker, Tracey City, Tenn.

Buff, S. C, B. Leg's, B. Minorcas. S. L. Wyand'ts Lt Brahmas Abner S. Moyer, Souderton, Pa.

EGGS. Buff Cochins, B.B.R. Games, W. Wy's. $2 per 13. Lee O. Vernier, Gilletts, Penna.

BUFF COCHINS exclusively. Eggs, $1 per 13. Cir. Fenton Sherwood, Box 69, Suffern, N. Y.

I. GAMES. B. P. R., B. Coch., L. Bram. Eggs. Write. James Leonard, Canton, Ohio.

Bone and Clover Cutter, Bone Mill, Incubators, Wire Net., half price. "C," Box 30, Huntington, L. I.

BARRED P. BOCKS AND EGGS. (Particulars.) C. C. HARTMAN, Tiffin, O.

S. C. Br. Legs., Sil. La. Wyans., Bar. P. R'ks. Eggs $1 50 per 15. Cir. John F. Beth, Elgin, Ills.

Mrs. J A. Ozbun, Opolis, Kan. Toul Geese, B. P. R'ks, S. C. Wh. and Br. Legs. Eggs $1 per set.

Eggs from L. Brahs., B P. R'ks, G. Wyans. and W. Legs. F. W. Liguton, Williamsport, Pa.

H. E. Hetrick, Ransom, Ill. Breeder of pure bred B. Langs., B. P. R'ks, S. L. Wyans. St. for Cir.

Wh. Wonder, Wh. P. R'ks eggs per setting or 100. GERRY B. LAWRENCE, Ashby, Mass.

Eggs for hatching of standard B P. Rocks. Cir. free. A. S. SWARTLEY, Lime Lexington, Pa.

Wh and Bl Mins. and I Game eggs from good stock, $1.00 per 13. S. A. SHAW, Winthrop, N. Y.

S. C. Wh. Legs and B. Ply. Rocks. Eggs $1.50 for 15, $2.50 for 30. E. W. Brown, Wallkill, N. Y.

Pit Games only. Send stamp for circular to M. C. DUNLAP, New Martinsville, W. Va.

T. B. Lutes, Robbinsville, N. J., B. P. Rocks, Br. Leghorns. Eggs, $1 50 per 15; 2 sets, $2

Mrs. T J Kesler, North Salem, Ind., breeder of Ideal Bl Lans Per score 92½; eggs $1.50 per 13.

15 of the finest B. L. eggs, $1.50. JAMES W. ELLIOTT Bangor, Pa.

A few white guineas, also W. Ply. and Brahma Ckls, low prices. N. Porter Brown, Westboro, Mass.

Ind. Games exclusively, eggs from pure bred stock, $1.50 per 15. J. A. Richardson, Hagerstown, Md.

$1.00 for 15 pure S. C. R. Leghorn Eggs. Address O. H. PATTIE, Rapidan, Va

Buff Cochin Cockerel; bright buff all over; good points; $6. J. W. SILCOTT, Snickersville, Va.

Ronen Drakes. A few good ones for sale at a reasonable price. W. C. Conrad, Elwyn, Pa.

Buff Legs., I. Gs., B Min., and 8 varieties poultry. Stamp for Cir. FRANK P. KERNS, Chalfont, Pa.

S. C. W. Leghorns. Eggs $1.25 per 13. W. M. MORGAN, Box 7, Athens, Brad. Co., Pa.

B. P. Rock, P. Ch., W. Wy., R. C. Br. Lg., Bl. Min., Bl. Lan. Eggs $1. J. D. Engel, Middleburg Md.

S. C Br. Leghorns exclusively. Eggs from finest pens $1. E. J. McCARTNEY, Jamestown, Pa.

Plymouth Rocks for sale, at $1.00. Eggs $1.00 per setting. Address L. K. DAVIES, Blair, Neb.

S. S. Hamburgs and S. C. B. Leghorns. Superior stock. Eggs $1.25 per 13. A L. Cary, Lewis, O.

$1.00 for 13 and $3 for 50 S. C. B. Leghorn eggs. WILSON TERRY, Stillwater, N. Y.

Buff Legs., Lt. Brahs, Barred Ply. Rocks. Fine birds. Eggs $2 per 13. Geo. H. Lee, Exeter, Neb.

Choice Bu. Legs., Lt. Brahs., B. P Rks. Eggs $1 per 13. MRS. H. A. YOUNT, Box 70, Dakota, Ill.

WANTED. 600 Br. Legs. Pullets and bens; hens not over two years old. Address Lawrence County Poultry Farm Co., Coal Grove, O.

$12 HAMMONTON Incubators up to 300 egg size, fully guaranteed. Brooders $6. Poultry and poultry supplies; test. and illu. cirs. for stamp. J. A. Chelton, Fairmount, Md.

Headquarters for Bu Legs. Stock and eggs for sale. Eggs $5 and $3 per 13 East Tennessee Poultry Yards, W. B BALDWIN, Propr, Greenville, Tennessee.

Skamateles Driving Park Poultry Yards. Black Minorcas, S. C Brown Leghorns and Pekin Ducks. Also high class road horses sired by Gothic Wilkes (2.34¼. Stock all first-class, prices reasonable Eggs $1 per 15. Thos. Hollier, Jr., Skamateles, N. Y.

EGGS FOR HATCHING. S. C. W. Legs., bred from the old prize winning Centennial strain, crossed with Knapp Bros., of Fabius, N. Y., world famed prize winning stock. Eggs from selected pens at $1.50 per 15; $2.50 per 30; $3 per 45. Address, Grand View Poultry Yds., F. V. Card, Dryden, Tomp. Co., N. Y.

OUR WHITE LEGHORNS AND WHITE WYANDOTTE FOWLS AND PEKIN DUCKS STAND AT THE HEAD.

CHAMPIONS OF THE WORLD.

We were awarded at the World's Fair seven **1st**, three **2d** and one **3d** prizes on eleven entries. **High Scoring Birds** on exhibition, **any variety**; also **1st and 2d high scoring Breeding Pen** on exhibition, **any variety.** At 32 of America's leading shows during the past 11 successive years, with over 20 different judges (the best in the world), our birds have **won a record** that has **no equal**; 6 times at the Great Madison Square Garden Show. More 1st, Sweepstake and Special Prizes awarded our strain, exhibited by us and in the hands of our customers, than all other strains combined, and in many cases at the greatest Shows the winning birds come direct from our yards or from eggs purchased of us. We have never lost the best prize offered on White Leghorns, First on Breeding Pen. We are **HEADQUARTERS** for the best laying varieties and the best general purpose fowl known. All our finest birds are in perfect breeding condition, not having been impaired by being fitted and confined in coops at the late winter shows. Cockerels, Trios, Breeding Pens and finest Pekin Ducks at low prices for quality. Eggs for hatching from either or both varieties, $3 per 13, $5 per 26, $10 per 65, from yards headed by the 10 best male birds in America. Eggs for incubators from choice, well mated stock, $10 per 100. Pekin Duck eggs $2 per 11. We furnish B. R. Knapp's Rose Comb White Leghorn stock or eggs direct from his yards. Send stamp for new illustrated catalogue, giving Highest Prize Record ever won by any breeder of any variety.

Address,

KNAPP BROTHERS,
Box 501. **FABIUS, New York.**

Barred Plymouth Rocks. Two strains. Eggs for hatching, $1 for 13, $1.75 for 26. Circular free. H. J. HOLLINGSWORTH, Wheel, Md.

BUFF LEGHORNS, (Arnold's); Ind. Games, (Sharp's and Frayn's); Bl. Mins., (Northup's). Eggs $1.50 per 15, $2 per 26. Lance & Co., Wash., N. J.

BUFF Wyandottes that are Buff. Eggs $3 per 30. 14 other varieties, $1 for 15 eggs, pure bred. Cir. W. E. Greenman, Triangle, N. Y.

BLACK MINORCAS. Indian Games, Buff Leghorns, Houdans, White Rocks, etc. Eggs and stock. REV. L. E. CRUMBLING, Hall, York Co., Pa.

IT WILL PAY YOU TO SEND FOR the Peep-'o-Day Brooder circular, Dover, Mass.

Indian Games, 1st pullet and 2d cockerel, at World's Fair. Circular. Eggs $3 and $4. D. C. McELROY, St Clair, Mich.

Rose Comb Brown Leghorns a specialty, also B. P. Rocks. Eggs $1.50 per 15, $2.50 per 30. Circular free. J. L. RANDOLPH, Bartlett, Ohio.

A. P. ALLEN, Meadville, Pa. Pekin Ducks and S. C. W. Leghorns; 5 other varieties. Eggs $1.00 per 13; $2.50 per 39. Catalogue free.

IMPERIAL BROODER. BEST MADE. Catalogue free. W. J. EAGAN, Collingwood, N. Y.

S. C. B. LEGHORN EGGS and Maltese Cats for sale. PAUL T. JONES, Jr., Corinth, Miss.

EGGS for hatching from all the Standard varieties of poultry, $1 up. Illustrated circular free. The United Fanciers. Kennett Square, Pa.

EGGS. Buff Leghorn, Red Cap. 15 eggs, $1.50. G. wyns., L. Brams., B. Min., 15, $1.00. Cir. free. J. D. BRANDS, P. M., Warrington, N. J.

EGGS. 13, $1.25; 26, $2.00. No. 1, B. P. Rocks and R. C. B. Legs. Cata. for stamp. (14th year.) Leading varieties. S. P. Yoder, East Lewistown, O.

B. and W. P. Rock Cockerels, White Wyandottes and Red Caps. Eggs $1.00 per 13. A. RISLEY MULLER, Traxton, N. Y.

Eggs at panic prices, from I. Games, S. C. White and S. C. Brown Leghorns and Black Minorcas. Send for Cir. J. A. MOHN, Fredericksburg, Pa.

Fletcher L. Brabs, cock scored 95½, at Reading, 1892, B. P. Rocks, average score of pen, 94½. Eggs $1 per 13, $2 per 27. No Cir. J. F. Sellers, Pottstown, Pa.

Address Col. Joseph Leffel, Springfield, Ohio, for the nicest Pet Stock and Poultry Circular ever printed. Every poultry raiser should have one.

Dr S. C. Moyer, Lansdale, Pa., breeder of L. Brahmas, B. and W. P. Rocks, S. and W. Wyandottes and Anconas. Eggs and stock for sale.

Breeder of high class White Wyandottes and Indian Games. Eggs and stock for sale. Write me C. D. BOWER, Vintage, Pa.

Wilson Bros., Kelsey, O., breeds one variety each S. C. Brown and W. Leghorns, S. S. and White Wyandottes. Write.

EGGS from pure Buff Leghorns, 15 for $2, 30 for $3.50, 45 for $5. Black Minorcas, 15 for $1.50, 30 for $2.75, 45 for $4. E. T. Wilcox, Harford, Cort Co., N. Y.

Schuylkill Poultry Yards. Bar. Plymouth Rocks, Lambert and Crook strains. Eggs $1.50 per 15 prepaid. W. H. Ellis, U. S. Express Agent, Pt. Carbon, Pa.

15 eggs for $1.00. Sil. and Wh. Wyans., Buff and Part. Cochins, Lt. Brahs., Gol Seabr. Bauta's, German Hares. A. B. Wingert, Northampton, Ohio.

Gold and Silver Wyandottes, won 4 first, 1 second prize at W. V. S. Farm, I C. games and Phoenix or Japanese long tail games Stamp for circular. O. J. GASTON, Wellsburg, W. Va.

BLACK MINORCAS a specialty. Also prize winning S. C. Brown Leghorns. Eggs $1 per 13. J. P. CARTER, Bynum, Ind.

HAWKS IN THE POULTRY YARD. Send 25 cts. in stamps to Oneida Community Limited, Kenwood, Mad. Co., N. Y., for a hawk trap and Cir. describing the best way for catching these pests.

EGGS! EGGS! EGGS! B. P. Rocks, Buff Cochins and Brown Leghorns. 12 years a breeder. Low express rates. J. W. GRIGG, Mt. Juliet, Tenn.

If you want 1 dozen or 1,000 Pekin Duck Eggs, send to **BROOKSIDE DUCK FARM, Columbus, N. J.** Get the best Show your ducks and get the prizes as we always do.

FOR SALE.—Choice S. C. W. and B. Leghorn cockerels and pullets. Eggs $1 50 for 13, $2.50 for 26. GLENSIDE POULTRY YARDS, Ithaca, N. Y.

Eggs from the prize winners of '94. We have them, you'll regret it if you buy eggs before you get our circular. Only $1.50 and $2 per 13. W. C. GEYER & CO., Norwich, O.

I pay the express on eggs for hatching. B. Min., S. C. B. Legs., B. Lan., S. Wyan., Anconas, L. Bra., Pekin Duck. Send 2 stamps for catalogue. A. Kunze, Garden Prairie, Ill.

South Dickinson Poultry Yard. B. P. Rock, Black Minorca, Br. Leghorn and Gol. Wyandotte eggs in season, $1 per 13, also Indian Games, $2 per 13. JOHN B. KUNTZ, Uriah, Pa.

LOOK HERE! EGGS FROM SELECTED stock of B. P. Rocks, S. C. B. Leghorns. Best birds for profit. ORWEGSBURG, PA. Orwegsburg Creamery Poultry and Stock Farm.

MANN'S BONE CUTTERS

are always used by **WISE POULTRYMEN** when raising

BROILERS! BROILERS!

Life is too short to use any other. **SEE? C?**

13 TONS 26,000 lbs. of green bones were cut in one single Mann's Bone Cutter in 2 months by C. A. Bartlett, manufacturer of O. K. Poultry Food, Worcester, Mass.

Cuts FAST and FINE enough for CHICKENS 3 days old.

PRICE. $10.00 and upward. Illustrated Catalogue free if you mention this paper.

F. W. MANN COMPANY, - - MILFORD, MASS.

Bl. Langs. exclusively (Kirby and Smith Sts.) Eggs $1.25 for 13, $2 for 26. W. L. Hannahs, Bristol, Ct.

Fox Terrier Pups from registered parents. Brahma, W P. Rock and Golden Polish eggs $1 for 13. Toulouse Geese eggs 20 cents each. ENOCH PARK & SON, Harristown, Ind.

Brown and White Leghorns, birds of great shape and color won at Chicago, Buffalo, Rochester and Binghamton. Eggs from best matings $2 for 13, $5 for 40. C. E. HOWELL, Elmira, N. Y.

EUREKA POULTRY CO., Port Huron, Mich. S. H. JACKSON, Lessee.) Stock for sale from 10 varieties of fowls. Eggs $2.00 per setting. Write for wants.

WM. S. TOLEY, Morris, Ill. Breeder of W. G. and S. Min., B. and P. Cochs., Bl. Java, S. S. Hambs., Bl. Langs., B. P. Rocks, eggs $1 per setting. B. Turkeys, $1.50 for 11 eggs. P. Ducks, $1 for 11 eggs.

EGGS. Indian Games, $2.00 per 15; B. Langshans, $1.50 per 15; B. P. Rocks, $1.50 per 15. Stock for sale in season. JOHN E. WEST, 232 Locust St., Columbia, Pa.

B. F. Bryant, Johnson's Creek, N. Y., Breeds America's best Wh. and W. C. Bl. Polish. 8 1st and 2d Prems., at World's Fair. Also S. C. Bu. and Br. Legs. and Lt. Brahmas. Eggs $3.00 per 13, $5.00 per 26.

Golden and White Wyandottes and White Plymouth Rocks. Eggs from choicest stock $1.50 per 13, $4 00 per 39. Cir. free. See May, 1891, No. POULTRY KEEPER. T. F. Miller, Mattituck, N. Y.

My choicest Buff Cochins, Lt. Brahmas and B. Langshans, for only $2 apiece, this month. Do not miss this chance. Send for Cata. of Mon. Incu. and Brooder. W. S. BYARD, Walnut Hill, Cincinnati, O.

Bay View Poultry Farm, Chas. F. Newman, Huguenot, S. I., N. Y. B. and W. P. Rocks, W. Wyans., D. Brahmas, Pit Games. Imperial Pekin Ducks my specialty. Stock and eggs for sale.

S. C. B. Leghorns, Lt. Brahmas, Black Minorcas, standard breed. Eggs $2 per setting, two settings for $3.50. Send for circular. C. C. CRAVER, York, Pa.

Fine lot of White Wyandottes (Hathaway Bros.), White Plymouth Rocks. Eggs $1.50 per 13. Also fine large Pekin Ducks (Rankin's). Eggs $1.50 per 11. Address J. H. BIDGOOD, Jr., Hodges Ferry, Va.

EGGS FROM FIRST-CLASS FOWLS. I have fine birds to breed from the coming year. Also strong and healthy Turkeys which won first prize in Iowa, Minnesota, Illinois and Wisconsin the last season. Send for Illustrated Circular free. J. R. BRABAZON, Delavin, Wis.

BUFF Wyandottes, Plymouth Rocks. FOWLS, EGGS. Clean sweep in prizes at World's Fair on Rocks. Also birds from my yards won at late N. Y. Show. Eggs $5 for 13, Buff Wyandottes $3 for 13. J. D. WILSON, Worcester, N. Y.

INCUBATING THERMOMETERS. Tested and guaranteed accurate. Sent by express prepaid (at my risk) to any part of the U. S. for $1.00 each, or two sent at one time for $1.50. Orders filled same day received. W. A. Wooldridge, Gifford, Ill.

Pekin Duck eggs furnished from stocks that won all of the Frist Premiums at the **NEW YORK SHOW**, in '93. Fertility and safe delivery guaranteed. Write for circular. A. J HALLOCK, Speonk, N. Y.

BARRED P. ROCK COCKERELS. A few choice ones for sale, $2.00 to $3 00 each. J. L. RANDOLPH, Bartlett, Ohio.

S. C. Wh. Legs., Bl. Mins., S. S. Hambs., Lt. Brahs. Stock bred for eggs as well as fancy points. Eggs $1 50. Each additional setting $1. Illus. Cir. free. Connecton River Poultry Yards, Orcutt & Wood, Proprietors. Painted Post, N Y.

GRIT FOR FOWLS & CHICKS. BEST & CHEAPEST.—SAMPLE FOR STAMP. WEBSTER & HANNUM, CAZENOVIA, N.Y.

BARRED PLYMOUTH ROCKS exclusively 150 per setting, $1 for each additional set in same pk. Orders promptly filled Stock, free range, eggs fresh. JOHN WAGNER, Lancaster, Wis.

GOLDEN AND SILVER WYANDOTTES. Fresh laid eggs for hatching, from handsome thoroughbred Golden or Silver Wyandottes. Carefully packed. 13 for $1.50, 26 for $2.50. Address, T. H. HOSKIN, Warren, Pa.

Bargains in eggs. M. B. Turkey, $2 per 9; W. P. Duck, $2 per 11; S. C. B. Legs., $1 per 13. W. P. Rocks, B. Langshan, Gol. Wyan., Lt. Brahma, P. Coch., Bl. Min., $1.50 per 13. Also Poland China Swine. Address, H. F. Barr, Dakota, Ill.

IS THIS WHAT YOU WANT? BUFF Cochins, L. Brahmas or B. P. Rock eggs, from large, healthy fowls, well up in standard points. Eggs $2 for 15. Stamp for reply. LEWIS A. JILLSON, 56 Richmond ST., Prov., R. I.

Dr. Wiant & Beringer, Marion, Ohio. Sole importers of Geffekin's Buff Leghorns. Send 2 cent stamp and get our large circular, giving matings, winnings, prices, etc Fowls for sale. Improved Spongia, Roup cure, 25 cts., 50 cts. packages.

DOLLAR EGGS. B. P. Rocks, W. P. Rocks and Golden Polish $1.00 per 13 until August, also Golden Polish stock for sale. I have secured fine new males to mate the above breeding pens. Good hatch guaranteed. O. G. BILLIAU, Quakertown, Pa.

Buff Leghorns, B. Minorcas, S. S. Hamburgs, Egg Yard, No. 1, $1.50 per 13; yard No. 2, $1 per 13, $1.50 per 26, $2.00 per 39 or $4.00 per 100. White P. Ducks, 75c. per 11. Fall Creek Poultry Yards, L. H. AUSTIN, Prop., McLean, Tompkins Co., N. Y.

AT NEW YORK, '94, four firsts, two seconds. **PHILADELPHIA, '92 and '93.** 9 entries, 10 prizes. Reading and West Chester, Pa., '94, 39 prizes. Rose and S. C. B. Leg., Bar. and W. P. Rks. (pullet laid at 4 months). Ckls. scored 95 and 96. Eggs $1 per 13, 75 for $5. Cir. W. W. Kulp, Pottstown, Pa

STEPHEN SPENCER, Morris Plains, N. J., breeder of high-class **LIGHT BRAHMAS** for many years, prize-winning at several leading exhibitions. Choice cockerels and pullets for sale, $3.00 to $5.00 each; best strains. Eggs, from prize stock, $2.00 for 13. Write for wants.

EGGS from prize fowls, that are great layers G. Wyandottes and B. P. Rocks, America's best. Buff Leghorns, that are buff, G. S. Hamburgs W. C. B. Polish Malay and Indian games England's best, very large and of great merit. Cir. and prices free. J. F. RYDER, Hagerstown, Md.

TRUE GRIT POULTRY YARDS. Smith Bros., Berea, Ohio. Breeder of thoroughbred fowls. R. C. B. Leghorns, Light Brahmas, S. L. and G. Wyandottes, B. P. Rocks, Indian Games, Pit Games, Kentucky Dominiques, Irish and Mexican Grays, Irish B. B. Reds. **EGGS IN SEASON.** Stamp.

LIGHT BRAHMAS. Winners at Bloomington, Ill., 1892, Indianapolis, Ind, 1893 and at World's Fair. Some grand cockerels for sale, also pullets. 17 years a breeder of Lights. Eggs $3 per 13, $5 per 26. ALFRED DOYLE, Morgan Park, Ill.

EGGS 27 Varieties. FOWLS Send 5 cents for large book telling all about Poultry, F. S. STAHL, Quincy, Ill. **FOWLS EGGS**

BROWN LEGHORN, WHITE LEGHORN, BLACK MINORCA, Eggs for hatching, $1.50 per 15.
BUFF LEGHORN, LIGHT BRAHMA, BARRED PLY. ROCK, Eggs for hatching, $2 per 15.
WILL J. WARRICK, Washington, Pa., Near Pittsburgh, Pa. 32 Penn Ave.

BRONZE TURKEYS, INDIAN GAMES, White Wyandottes, Black Javas, Black Minorcas, Barred P. Rocks, Pekin Ducks.

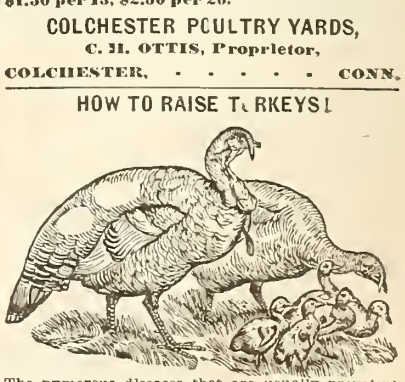
Eggs fertile and from strong well bred stock that will hatch **sure winners** in any exhibition, at $1.50 to $2.00 per set Eighth annual Catalogue free. R. W. DAVISON & CO., Glendola, N. J.

BARRED PLYMOUTH ROCKS Exclusively.

Eight yards finest and best in the world, large, healthy prize winning stock. **Eggs for hatching, $1.50 per 13, $2.50 per 26.**

COLCHESTER POULTRY YARDS, C. H. OTTIS, Proprietor, COLCHESTER, - - - - - CONN.

HOW TO RAISE TURKEYS!



The numerous diseases that are usually prevalent among very young Turkeys may be prevented by the use of

CARY'S PILLS.

—SEND FOR CIRCULAR.—

E. FOUGERA & CO., 30 North William Street, - New York.

☞ And Druggists generally.

A. G Clemmer, Morwood, Pa. 8 leading varieties. Pure bred poultry. Eggs $1 ⅌ 15, $3 ⅌ 60. Cir. free.

Address The Santa Ana Incubator Co., Santa Ana, Cal., for their new catalogue free. Cor. solicited

Buff Cochins. Fine trios, $6.00; eggs $1.00 for 15. **J. W. SILCOTT, Snickersville, Va.**

B. Mins., S. C. W. Leg., $1 per 15; B. Lans, Houds., $2 per 15. Elmer K. Clemmer, Harleysville, Pa.

Black and Wh. Langs. and Wh. Cochins, Barred P. G. Rocks. Eggs $1.00. S. L. Farrar, Bath, Me

Brown Leghorns.—Noted egg producers and nonsit. J. A. Bailey, 14th and Stout St., Denver, Col.

Buff Leghorns, A. D. Arnold's strain. Eggs $2.50 per 13. **T. J. BENNETT, Option, Pa.**

Book on diseases, cures, plans for incubator, 10 cts. silver. L. O. FUBTS, Jeffersonville, Ohio.

BROWN LEGHORNS, CHOICE STOCK. A. E. HOLMAN, Hammonton, N. J.

BUFF LEGHORNS that are Buff. Circular free. Send Geo. S. Barnes, Battle Creek, Mich.

A. Dominiques, 5 other varieties, Illus. Cir. free. G. S. Poultry Park, Guilford Springs, Pa.

Prize winning S.C.B.Legs., L.Brahs., P.Coh's., and B.P.Rocks. Eggs $1. Wm. Miller, North Bend, Neb.

Eggs for hatching, R. C. B. Leghorns and W. P. Rocks, $1 per 15. A. H. Palmer, Vincent, Ohio.

J. Y. Webb, Jr., Minden, La. Ind. Gms., Spaulding Baut's, Autocrat Brahs., P. Rks and Pit Games.

S. C. B. L. Pullets. Eggs from S. C. B. Legs. and Bl. Mins., $1.50 per set. H. E. Henderson, Petrolia, Pa.

J. W. Miller, Hatton, Pa., breeds 28 varieties of thoroughbred poultry. Eggs $1 per 13. Cata.

Eggs. Bl. Mins., Bl. Langs., W. Ply. R'ks, Ind. G'ms. Cir. Mrs. Ireue Fleming, Circleville, Ohio.

B. P. Rocks only Eggs for hatching. Write for prices. W. E. SNAVELY, Hudson, Ill.

Thoroughbred Sil. Lac. Wyans. Eggs from breeding pens, $1.00 per set. John Wurster, Keokuk, Ia.

Egg for hatching, cheap, 10 varieties Stamp for Cir. J. H. GOLTZE, Sherrard, W. Va.

Bu. and Br. Legs., Bl. Mins. Lt. Brahs., Houdans, $1 for 13. Mrs. J. P. Crossmon, Norwalk, Ct.

S. C Brown Leghorns, 1st premium stock. Eggs $1 per 13. FLOYD BRADFORD, Sylvania, Pa.

S. S. Hambs., R. Spanish, P. Rocks, Br., Bu. Legs., B. Mins. St, for cir. Ent'p'se Poul. Y'ds, Annville, Pa.

Langshans, W. and S. L. Wyandottes, Pit Games. Eggs $2 per 13. F. M. LONG, Spades, Ind.

EGGS for hatching from 11 varieties of pure bred poultry. J. O. BARTLETT, Lancaster, Wis.

Walter Shewey, Effna, Va. Prize winning Sts. S. C. R. Legs., W. F. B Spanish, B. T'ks and P. D'ks.

Mammoth B. P. Rocks. Eggs $2 per 13, two settings for $3. J. P. HAACK, Elmore, O. Box 148.

B. P. Rocks, Bl. Langshans, G. Wyans. Eggs $1 per 13. Mrs. Sue C. Searight, Carlisle, Pa.

S. C. W. Leghorns and B. P. Rocks, price record free. J. SHINEMAN, Fort Plain, N. Y.

Address Mrs. Kellie English, of New Palestine, Cooper Co., Mo., for Bu. Coch. and B. Leg. eggs.

Eggs. B. P. Rocks and S. C. W. Leghorn. 15 for $1. J. R. G. ALLISON, Spring Mills, Pa.

Bl. Mins., best strain eggs, $1.50, and S. C. B. Legs., $1. W. A. Wier, 52 N. Hancock St., Wilkesbarre, Pa.

ROCKS America's best circular "Free" C. W. Romoser, Box 7, Marion, O.

S. C. B. Legs., exclusively excellent laying strain, 15 eggs $1. J. J. Thompson, Stubbs, O.

Rose Comb White and Brown Legs., Silver Laced Wyans., 15 eggs, $1, 39 $2. J. W. Cook, Poneto, Ind.

PIT GAMES only. Stamp for circular to **D. L. LONG**, Lock Box 5, New Martinsville, W. Va.

R. C. Br. Leg. eggs for hatching from fine stock, $1 per set. Lewis Helbert, Nankin, O.

S. C. W. Leghorns only. Eggs 75 cts. per 13. A. W. GLUESENKAMP & SON, Batesville, Ind.

EGGS.—B.P.R. and Bl Minorca, 15 for $1. Pure bred. Cash with order. Robert Marbury, Riverside, Md.

R. C. Br. Legs and W. Wyans. Leading Sts. Eggs $1.25 per 13. E. P. Hortman, Marcellus, Mich.

W. Wyandottes, winners at Denver, 1893-94. Pen 187¾. **MRS. C. E. LULL, Ft. Collins, Col.**

Given Away. Prairie State and Eureka Incus., $25 each. Address W. T. Massey, Smyrna, Del.

First prize Game Cock, Rochester. Pure Spaulding, $10. White Games. I. A. Spraker, Sprakers, N. Y.

Silver Wyandotte eggs, $1.50 for 13. Cockerels, $2 each. **THEO. WALKER, Denison, Ia.**

Barred and Wt. P. Rocks and S. C. B. Leghorns. Circular. M. W. STRICKLER, York, Pa.

EGGS for hatching from thoroughbred P. Rocks. $1.50 per 13. M. HOLLOPETER, Ocouto Wis.

S. C. B. LEGS., B. Mins., B. P. Rs. Eggs $2 per 13; $3.50 per 26. Circular. J. R. ERNST, York, Pa.

EGGS from S. C. Brown Leghorns. Prize stock. $1.25 per 13. H. F. CARRIEL, Cuba, N. Y.

Barred Rocks. Stock and eggs. $1 per 13. Incu. eggs, special rates. A. L. Kunkel, Lisburn, Pa.

BUFF LEGHORN eggs, $1.50 per setting, (15). **W. I. DRAKE, Westtown, N. Y.**

Eggs from choice L. T. Brahmas, $1 for 13 or $3 per 100. **B. W. HARTMELE, Le Roy, N. Y.**

JUST READ THIS!

Fifty views of the World's Fair, the Poultry Keeper one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for fifty cents to new subscribers. See adv.

CAPON Instruments postpaid, $2.50. G. P. PILLING & SON, 115 S. 11th St., Phila., Pa. Book free.

Cut Clover Hay for Poultry put up in Burlap sacks. HARVEY SEED CO., Buffalo, N. Y.

C. W. McFarland, Iberia, Ohio, Breeder and Imp. Sil. Sp'gled Hamburgs, S. C. W. Leghorns. Cir.

Christian Schman. Levin, Pa Breeder of 10 varieties of pure bred poultry. Fancy Pigeons.

DR. JOHN W. KING. Kent, Conn., breeds the best W. Leghorns, L. Brahmas and W. P. Rocks.

Eggs for incubators, at 50 cents per dozen. J. F. Clarke, Marietta Poultry Farm, Marietta, Ga.

Eggs from fine strain Bl. Minorcas, $2 per setting. Mrs. H. B. Barnes, 230 East Main St., Ionia, Mich.

Eggs $1.00 per 13. Send for large illustrated circular. C. D. SMITH, Fort Plain, N. Y.

Eggs from prize winning B. P. Rocks and S. C. B. Leghorns. WM. WEST, Pecksburg, Ind.

EGGS! S. C. B. Leg, $1 per 13; Bu. Cochs., $2 per 13; Duck, 50c. per 11. Geo. Meredith, York, Pa.

For Sale. Pure bred Sil. La. Wyan. C'k'ls., eggs in season. D. H. Wottring, La Grange, Lorain Co., O.

For sale or exchange.—A few good Lt. Brahmas, for choice Jersey cow. A. N. Doane, Gainesville, N. Y.

Games only. B. B. Reds my specialty. Stock. Eggs in season. T. N. Salisbury, Russellville, O.

Grand Buff and Wh. Leghorns. Eggs $1.50 to $3. Good layers. John H. Hellerman, Doylestown, Pa.

High bred Barred Plymouth Rock eggs, $1 for 13, only breed kept. Mrs J. A. Steveus, Mt. Vernon, O.

Ind. Games. Fowls for sale. Eggs, $1.50, 13; $2.50, 26. Jonathan Summers, Toledo. H'b'gton Co., Ind.

Indian. Eggs $2.. B. P. R. and B. L. Eggs $1. Indians for sale. S. R. Miller, Chambersburg, Pa.

Indian Games, S. C. B Leghorns, B. Astrachans. Eggs in sea. Cir, W. A. Williams, Rome City, Ind.

JNO. D. SOUDER, Telford, Pa. Breeder of 14 varieties of pure bred poultry. Catalogue free.

Leghorns, Br. Bu. Wh., B. P. Rocks. Prize winners. Eggs and Stock. O. P. PHILLIPS, Amo, Ind.

Mammoth Light Brahmas. Eggs $1.00 per 15. Andrew M. Gallagher, Box 417, Norristown, Pa.

Pit Games only. Hennies. Stamp for Circular. **GEO. A. BOGERT, Pemberton, Va.**

Printing, 100 letterheads, 100 cards, 100 envelopes, sent postpaid for $1.75. W. Speke, Lowell, Mass.

Prize Winning L. B., B. P. R. and S. C. W. L. Stamp. Wm. H. Van Doren, Buckingham, Ill.

R. C. B. Legs., Forsyth, Montague and Croffut St'ns. 15 eggs $1. F. R. Cutting, Waters, Otsego Co., Mich.

S. C. B. Leghorns, choice birds, $4.00 per trio. Eggs $1.00 per 13. W. T. BALL, Moline, Ills.

Send for our beautifully illustrated circular of best breeds. Pleasure Poultry Yards, Marysville, Pa.

S. C. B. Leghorns, best strains. Cockerels for sale. Eggs $1 per 13. W. G. Wadsworth, Pittsford, Mich.

White Wonders, R. C. B. Leghorns and Blk. Mins. Stock and eggs. Wm Stelwagen, Garden, Mich.

1500 Ferrets, trained Ferrets, $3 a pair. sent C. O. D. Sam'l Farnsworth, New London, O.

200 B. Turkeys from 18 to 24 lb. hens, 40 lb. tom. JOS. W. FLEMING, Buckingham, Ill.

45 leading variety of fowls. Eggs for hatching. Stamp for Cir. E. H. Rodham, Shullsburgh, Wis.

Buff Legs., Ind. Games, S. S. Hamburgs. Send for circular and prices of eggs and stock. FRANK R. MINNER, Bechtelsville, Berks Co., Pa.

Buff Legs., Bu P. Rks., I. Gms., Bl Mins., P. Rks. P. D'ks. Old and young birds for sale cheap this month. Cir. free. Lewis C. Beatty, Washington, N. J.

Buff Wyandottes (Buffington Strain), 10 Cockerels for sale, $1.50 to $5.00 each. Also pair Buff Ply. Rocks, fine birds, $5. Jordan Philip, Jr, Hudson, N. Y.

Business hen of America, S. C. White Leghorns, C. H. Wyckoff strain. Eggs $1.50 per 13, $6.00 per 100. J. H. HALLACK, Cuba, N. Y.

Buff and Brown Leghorns, B. and W. P. Rocks, Indian Game, Bl Mins., Lt. Brahmas, Bu. Cochs. Eggs $1 and $1.50 per 15. Cir. A. C Fulton, York, Pa.

B. Plymouth Rocks, trio, $3.00 to $4.00. Best Cockerels, $1.50 Eggs, $1.50 per 13. **A. O. ROBERTS, Atlantic, Iowa.**

For sale. Eggs by the setting or 100 lots. P. R'ks, Orrocco (brown eggs) strain, the great winter egg producer. Set. $1.50. H. G. Whiteman, Milroy, Ind.

WANTED.—A pug dog bitch, from two to ten months old or a pair of young pugs. Address **H. HELLER, Jr., Wilkesbarre, Pa.**

Fresh eggs that will hatch from extra large prize Mam. Brz. Turkeys, Ply. Rocks and other choice varities. Cir. free. J. F. Barbee, Millersburg, Ky.

Ind. Games, B. Langshans, S. Wyandotts, S. B. Leghorns, T Geese. R. & P. Ducks. 4 yrds Pit Birds. Eggs $1 and $2 per 13. cir. T. Barouer, Altoona, Pa.

For sale. White Langshans, Golden Wyandottes, Bl. Minorcas, P. Bantams. $2 to $5 each. Eggs $2 per 13. W. H. Cunningham, Chenango Bridge, N. Y.

Imported Indian Games. Grand pen double laced birds. Eggs $3 50 per 15. Many other varieties. Peninsular Poultry Yards, St. Ignace. Mich.

GOLDEN WYANDOTTES. No better birds in America. Cockerel $5, trio $7. Eggs $2 per 13. **E. D. KEENEY, Arcade, N. Y.**

J. S. BARKER, Northville, N. Y. Lt. Brahmas, B. P. Rocks, S. C. W. and S. C. Br. Leghorns. Eggs $1.00 per 13. Choice stock.

Rose Comb Black Minorcas The great winter layers. Eggs, 50 cents each. **THEO. CAMPBELL, Lexington, Ky.**

B. B. R. GAMES, won over all Games at World's Fair. Won on S. S. & G. S. Hams. Game eggs, $5; Ham. $2 per 13. Chas. Schilds, Ionia, Mich.

Black Langshans and pedigreed Light Brahmas (Fitch strain). Eggs, $2.00 per 13. C. A. SNYDER, WAYNETOWN, IND.

EGGS from B. P. Rocks that **are Plymouth Rocks**, pure and sound, $2 for 13. FRED. B. CAMPBELL, Lee's Summit, Mo.

EGGS FOR HATCHING from nine profitable varieties. Send stamp for Illus. Cata., to F. A. Buhler, Racine, Wis Please name paper

EGGS.—B. Turkey, Gobbler, half Wild P. Duck, Ind. Game, mixed. Send for Cata. **MRS. H. C. BOGERT & SON, Cartersville, Va.**

EGGS. W. and B. Minorcas, W. and B. P. Rocks, W. Cochins, Wyandottes, Leghorns, $1 per 13. **S. L. HIBBERD, Lima, Pa.**

FOR SALE. 75 Light Brahmas, cockerels and pullets from my prize winners. Eggs $2 per 13. WALTER R. HIBBERD, Frazer, Chester Co., Pa.

For Sale.—Mammoth Bronze Turkeys and S. C. W. Leghorns. Choice stock. Eggs $1.50 per 13 $2.50 per 26. Mrs. M. L. Belden & Son, La Grange, Ind.

INDIAN GAMES. COCKERELS, $2.00. EGGS $2.00 PER 13. W. T. WILLIAMSON, Mason, Tenn.

Indian Games, (Majestic strain). Fowls cheap. Eggs in season. Four other kinds. **MRS. E. C. CHURCHMAN, De Soto, Iowa.**

It will pay you to send for the **BENSON BROODER, $7.00.** Cir. free. Agents wanted. **H. A. PETERSON, Benson, Ill.**

INCUBATOR EGGS, $5.00 per 100, $1.00 per 13, from large vigorous Plymouth Rocks. **C. M. IRISH & CO., Laurence, Mass.**

IMPORTED HOUDANS. Barred and White Plymouth Rocks. Eggs $2.00. **G. E. CHALFANT, Hammonton, N. J.**

I. X. L. POULTRY YARDS. J. F. Scholz, Prop., Erie, Pa. Eggs for sale from prize winning Gol. Wyandottes. Cir. free. Stock for sale.

J. H. TERENS & SON, Mishicot, Wis. Breeders of thoroughbred land and water fowls. Eggs in season. German and lop ear **rabbits.**

J. M. Lotridge, Cincinnatus, N. Y., breeds prize winning Sil., Gol and Wh. Wyans., Wh. Legs., Bl. Mins., Red Caps, Blue Andalu. and Ind. G'ms. Cir.

Leghorns only. W and B., R. and S. C. (Forsyth, Knapp, Tyler and Allen Str.) Stock and eggs. Cir. H. B. PINNEY, Calkins, Pa.

LIGHT BRAHMA COCKERELS, elegant birds, none better. **N. E. WOODS, Pecksburg, Ind.**

New Book, Profit and Loss in Poultry, sent free to any address. **J. E. WHITE, S. Glen Falls, N. Y.**

Pure P. Rock and W. Leghorn chicks just hatched for 8 cents each. Enclose stamp for circular. **JOS. D. WILSON, Rosemont, N. J.**

Prize Winning B. P. Rocks, S C. W. Leghorns and Toulouse Geese. **I. H. SHANNON, Girard, Kan.**

PIT GAMES ONLY ASSELS, JAPS, DUBY, SURRYS AND DOMS. Stamp. IDE ROSSITER, Girard, Pa.

ROSE C. W. Leghorns, bred especially for layers. Stock and eggs. Pekin Ducks (Rankin Strain). Cockerels $2 to $3. L. W. Lighty, East Berlin, Pa.

Pure bred stock, Barred Ply. Rocks (Munger and Thompson Sts.). Eggs $2 per sitting: for Incu. $3 per 100. **E. J. BULL**, Yellow Springs, Ohio.

SPONGIA TABLETS (compound), the reliable Roup Cure. By mail, 35c. per box, 3 boxes $1.00. **W. W. HOGLE, So. Evanston, Ill.**

S. **C. Brown Leghorns**, bred from the leading strains, selected stock, cheap now. Eggs $1 and $1.25 per 15. Write to Box 41, New Holland, Pa.

Send to **S. K. MOHR, Hilltown, Pa.**, for pure S. C. B. Leghorns and B P. Rock eggs, at $1.00 per 13, $2.00 per 30. Circular.

W. P. Rocks won at 8 largest shows. Cocks score 96½. Eggs $1 and $1.50 per 13. $6 per hundred. **D. L. STAUFFER, Spring City, Pa.**

$1.00 for 13 eggs. Plymouth Rocks, Barred and Wh, Blk Langs and Brahs. Choice stock. Mrs. T. SHUFF, New Berlin, Illinois.

$1.00 per 15 eggs, S. C. Brown Leghorns exclusively. Best strain guaranteed. Harry J. Worthingtou, Box 157, Doylestown, Pa.

500 fine large Chicks of all varieties at half-price. Eggs $2.00 for 15. Send 2 ct. stamps for 20 page Catalogue. Joe. A. Dienst, Columbus, Ohio.

J. Hallenbeck, Altamont, N. Y. All 1sts on B. Rock chick, at N Y and N E. Fair. All 1sts on Bu., W. and B. Legs., W. Wyans, at Altamont. Eggs $1 and $1.50.

A Big Cut Eggs, $1 per 13. Bu. Leg., R. and S. C. Br. Legs., Wh. Mins, Bar Ply. Rocks. Pleasant Lawn Poultry Yards. Vassar, Mich.

Quincy Incubators and Brooders. Best machine made for holding steady heat and hatching. Cir. W. G. Shute & Son, Marion, Ohio.

BUY eggs from prize winners. 10 varieties land and water fowls. Cata. free. Wisconsin Poultry Farm, Harry Bassindale, Prop, Somers, Wis.

Rose Comb Black Hamburgs, eggs $2 Pure stock. Choice Cockerel and Pullets for sale. **J. N. HAGER, Fort Atkinson, Wis.**

R. C. Buff Leghorns and 16 other varieties. Send 5 cents for finest catalogue out. **FAIRY LEGHORN YARDS**, Newell, Iowa.

High scoring Barred Plymouth Rocks, White Wyandottes and Black Langshans, bred by J. W. Rice, Harmonsburg, Pa. Fowls and eggs in season.

L. Brahmas and Ind. Games, Sharp and Webster's strains. Eggs $3.00 per 13, $5.00 per 26. SAMUEL T. LANTIS, Markle, Ind.

Buff Leghorn eggs for sale, Geffeken's Strain, at $2 per 13, by **GEO. S. WOOD, Birmingham, Erie Co., Ohio.**

S. C. B. Leghorn, B. Ply. Rock. Eggs, $1 per 16. Stock for sale. **L. HARRIS CREUSE, Still Pond, Kent Co., Md.**

100 Fowls! P. R'ks, L. Brahs., B. Legs., W & Gol. Wyans., B. Hambs., R. Ducks and P Guineas. Eggs $1 per 13. Incu. eggs. J. P Helling, Dover, Del.

Eggs from Buff Leghorn, $2 per setting, S. C. B. Leghorns, B. P. Rock and Pekin Ducks, $1 per setting. **J. S. BLOOM, Riegelsville, Pa.**

Jumbo Ind. Games, Frayne, Agitator and Champion strains. Eggs and stock for sale. Send stamp for Cir. P. O. HOPKINS, Hammansburg, O.

Eggs from prize Buff Leghorns, Indian Games and Light Brahmas. First yard, $2.00 for 15; Second yard, $1 00 for 15. No circulars. **PLEASURE POULTRY YARDS**, Annville, Lehanon Co., Pa.

Grandest Pen Black Minorcas in U. S. Eggs $2.50 per 15. Buff Leghorns, White Wonders, Barred Plymouth Rocks, Part. Coch., Ind Games, Lt. Brahs. Cir. Peninsular Poultry Yards, St. Ignace, Mich.

EUREKA Send 5 cents Or stamps For 100-PAGE BOOK OF INCUBATORS and BROODERS To **J. L. CAMPBELL, West Elizabeth, Pa.** This ad is good for $5.00 part pay for an Eureka Incubator

SITUATION WANTED.—A poultryman with many years' experience in managing poultry, and knows all about Incubator and brooder houses, also how to build and plan out a poultry farm, wants situation. Willing to work and has the highest references as to ability and character. Address **POULTRYMAN, P. O. Box 50, New York City.**

ENTERPRISE POULTRY YARDS, Miss Anna E. Brennen, 722 York Road, Baltimore, Md. Barred Plymouth Rocks, (mated by **G. O. BROWN**), five firsts, **Hagerstown, Md. 1893.** First cock, second cockerel, **Atlanta, 1894** Second cockerel, **Greenville, S. C.** First Cockerel, **West Chester, Pa.**, came from my yards. Eggs for sale

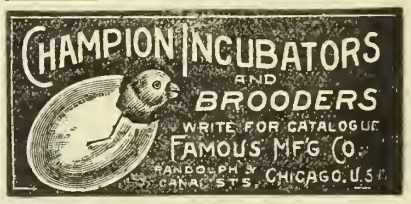
GERMAN SILVER KEY CHECK, with name and address stamped on, given free to each purchaser of eggs. Check alone, 25 cents. W. P. R. and S. C. W. Leghorn eggs, $1.25 per 13; I. Games, $1.50 per 13, Incubator eggs, B. P. R., crossed with I. G. cockerel, $4.00 per 100 **E. M. CHRIST** Pine Grove, Pa.

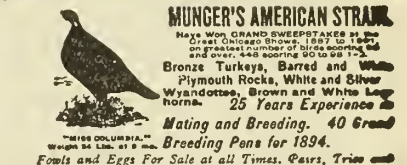
HAMBURGS. Eggs for hatching. Leghorns and R. C. White and Brown. Single C. Brown and Buff Leghorns and S. S. Hamburgs. Eggs, 13 for $1.50, 26 for $2.50, 39 for $3.00. Buffs, 13 for $2.00, 26 for $3.50, 39 for $5 00. Fowls and chicks for sale at all times. Stock fine. **Homer J. Brown**, Harford, Cortland Co., N. Y.

AMERICAN WHITE WONDERS

Rapidly growing in favor, both in this country and in Europe, being extremely hardy, rapid growers. Great egg producers and unexcelled for market purposes Send for Standard and 10 page Cata. (See ad Dec. issue.) Wm. N. FRENCH, New Haven, Vt.

LEARN TO **CAPONIZE** INSTRUCTIONS MAILED FREE. WM. H. WIGMORE, 107 S. Eighth Street, Phila., Pa.

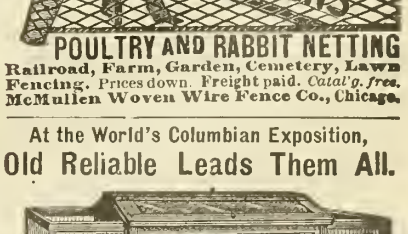




Railroad, Farm, Garden, Cemetery, Lawn Fencing. Prices down. Freight paid. *Catal'g. free.* **McMullen Woven Wire Fence Co., Chicago.**

At the World's Columbian Exposition,

Old Reliable Leads Them All.



Medal and Diploma ON OUR INCUBATOR AND BROODER COMBINED.

4c. stamps will bring you the finest Incubator Catalogue published. We can furnish you a hatcher that will please and with reasonable care last a life time. 45 Yards of High Class Fowls. 10 standard varieties. Address,

RELIABLE INCUBATOR AND BROODER CO., QUINCY, ILL.

H. A. WATTLES, Bayneville, Kan. Finest L. Wyandotts, B. P. Rocks and R. C. B. Leghorns in the West. Eggs $2 per 13.

LIGHT BRAHMAS, EXCLUSIVELY.
(Felch and Williams Strain.)
Eggs $2.00 for 13, $3.50 for 26. Stock for sale.
D. M POLING, Van Wert, Ohio.

The Perfected Incubator.—200 eggs, $25.00. Installments or rented. The Perfected Regulator for any incubator. 2 cent stamp for circular.
H. D. MOULTON, Taunton, Mass.

ST. BERNARD PUPS.—Largest dogs in the world. A few choice pups for sale cheap. Pedigreed stock. Sir Bedivere and Pfiddimmon strains. P. H. Jacobs, Hammonton, N.J.

S. C. Brown Leghorns and B. Plymouth Rocks. Eggs $2.00 per 15, express prepaid. Address **ELK ISLAND POULTRY CO., Island P.O. Goochland Co., Virginia.**

White and Black Minorcas, Barred Plymouth Rocks and White Wyandottes. Stock at all times. Eggs in season.
WM. J. SCHAUBLE, Erie, Pa.

Hammonton Inc'bators & PRESSEY'S BROODERS are the best. Cat. free. Hammonton (N. J.) Incu. Co.

Hampshiredown Sheep: twenty ewes due to lamb in February, for sale, 2 and 3 years old. Poland China Pigs, Beagles and Foxhounds, variety of Poultry. Stamp for Prices and Circular.
A. ELWYN STRODE, West Chester, Pa.

BARRED PLYMOUTH ROCKS
exclusively. Eggs for hatching from stock that is fine, large and vigorous. Send for circular. **E. G. McCORMACK, Perryville, Indiana.**

EARL SHAW'S. MRS. ED. KLEVER'S.
Buff Cochins, Lt. Brahmas, 300 grand birds for sale, exhibition and breeding birds, at lowest prices. Address us at Bloomingburg, Fayette Co., Ohio.

H. A. Bradshaw, Elizaville, Ind. Breeder of W. Wyn. and W. Lang. fowls. Has for sale 400 fine Breeding and Exhibition fowls and chicks. Send for circular giving matings and prizes won.

E. R. GIBBS, Breeder and Dealer in Ferrets, Guinea Pigs, Lop-eared and Common Rabbits. Send 2-cent stamp for circular. Norwalk, Ohio.

S. C. B. LEGHORNS. *Best combs and lobes, richest colored birds in America.* Prize winning youngsters now ready.
B. A. FOX, Richmond, Va.

Northup's Black Minorca. Catalogue, free, contains more reading than P. Keeper barring ads., also describes Rose Comb Black Minorcas and origin. Geo. H. NORTHUP, Raceville, N. Y.

$1.50 each for yearling hens, $2.00 each for yearling cocks. Barred Plymouth Rock from our prize stock. **CHARLES RIVER POULTRY YARDS,** Newtonville Lower Falls, Mass.

WHITE LANGSHANS. My birds always win. Warranted pure stock. Large size, great layers. Eggs $3 per 13. $5 per 26. Catalogue free. GEO. P. COFFIN, Box 20, Freeport, Maine.

Eggs for hatching from 120 Buff Leghorns, $1 per 13, $3.50 $5.00 per 100. No eggs sold for hatching over six days old.
GIBSON FICKES, Newport, Perry Co., Pa.

My Breeding Pens of Buff Leghorns, C. I. Games and Golden Wyandottes, contain as good birds as specimens exhibited at the World's Fair. I saw them. Eggs $2.00 per 15. Write to **F. A. HOWE, Waterford, Pa.** Satisfaction given.

14 GRAND PENS.
Nearly all headed by first prize males. Indian Games, Barred Plymouth Rocks, White and Golden Wyandottes and S. C. B Leghorns. Stock for sale. Eggs now ready. Send for catalogue. No 19, Galvanized Poultry Wire at 50 cents per 100 square feet, for 2 in mesh
E. E. HUDSON, KENNEDYVILLE, MD.

EGGS AND FOWLS FOR SALE From 50 varieties. **Largest RANGE in the West. 1600 prizes at 10 Shows in 1893.** Send three one cent stamps for best illustrated Catalogue size 8x11, 32 pages.
CHAS. GAMMERDINGER, COLUMBUS, O.

TWO FINE PENS.—On account of a change in location I am obliged to sell my two pens of Silver Laced Wyandottes, all splendid birds. Pen No. 1, cockerel, 4 hens and 6 pullets. Pen No. 2, two year old cock and 10 pullets. Either pen for $20. Cheap.
J. C. BRIDGE, Logansport, Ind.
Breeder of S. L. Wyandottes, exclusively, for 15 years.

WORLD'S FAIR MEDAL AND DIPLOMA,
Awarded our Green Bone Cutter. If you want a Green Bone Cutter that cuts four times as fine and just as fast as any $10 Bone Cutter, get our Circular.
WEBSTER & HANNUM, Cazenovia, N. Y.

ARNOLD'S BUFF LEGHORNS
Won the following special prizes at the late New York Show. Solid Silver Cup for largest and best collection. Gold Special, for best Cockerel. Gold Special for four best Buff Leghorns in the Show. Gold Special, for four best Cockerels. Gold Special, for ten best females in the Show. Eggs $3, $6 and $10 per 15. Send 2c. stamp for new catalogue.
AUG. D. ARNOLD, Box 77, Dillsburg, Pa.

EGGS FOR HATCHING. *B. Mins., P. Rocks, W. Wyans., Lans., W. Legs., C. Cochins, $1 per 13; Buff Legs., $1.50.* Practical *Farm Poultry* says: Get the B. Mins. for layers; they will lay you 200 large white eggs in a year. Fowls have good range and are guarant'd pure. Send for illus. cat.
W. W. SHAMPANORE. Little Silver, N. J.

JUST READ THIS!
Fifty views of the World's Fair, the Poultry Keeper one year, and the Farm and Fireside one year, all for fifty cents. The Farm and Fireside is semi-monthly. You get 36 papers and 50 views, all for fifty cents to new subscribers. See adv.

WHITE FACE BLACK SPANISH,
A specialty for 30 years. Eggs $2 per 13, $5 per 39. Circular and my photo free. **JOHN BENNETT, Sunman, Ripley Co., Ind.**

$20 PHOSPHATE for Corn and POTATOES. Sold to farmers direct. No Agents. **YORK CHEMICAL WORKS, York, Pa.**

BROILERS Eggs for incubators, $3.75 per 100, selected for sitting, 15 for $1.00. Fine vigorous pure bred B. P. Rocks exclusively.
G. W. PEABODY, Windham, Conn.

ROUP, CANKER AND GAPES CONQUERED. DR. OWSLEY'S SURE CURE FOR ROUP will do it every time. A new and scientific remedy and guaranteed to cure every case. Bottles 50 cts. and $1.00. Sold only by M. F. Stellwagen, St. Ignace, Mich. Breeder of high class poultry. Stock and eggs for sale.

FINE CHICKENS FOR SALE at a bargain of the following varieties: **WYANDOTTES, LANGSHANS, LIGHT BRAHMAS, PLYMOUTH ROCKS, BROWN and WHITE LEGHORNS, BLACK, BUFF and PARTRIDGE COCHINS.** Also **PEKIN DUCKS. W. H. JOHNSON, Jacksonville, Illinois. Orders for Eggs now Booked.**

CLEAR GRIT FOR POULTRY,
Stamp for Sample, Etc.
Orr's Mills Poultry Yards, Orr Mills, N. Y.

PINE TREE FARM, Jamesburg, N. J. W. H. ORDWAY, Prop., D. A. MOUNT, Supt. Mammoth, Pekin and Rouen Ducks, W. Turkeys, W. Guineas, Ind. Games, Lt. Brahmas, P. Rocks, Wyandottes, Blk. Minorcas, Leghorns, Geese and Pigeons. Eggs for incubators. Circular free.

BUFF and White Indian Games, the coming fowl, eggs $5.00 per 13, Buff, White and Br. Legs., Bu., Wh. and Bar. P. Rocks and Wyans., Langs., Lt. Brahs., Bl. and Wh. Mins., New York and World's Fair winners; eggs $2.00 per 15 or $3.00 per 26. Circular free.
LEWIS C. BEATTY, Washington, N. J.

THE HYDRO SAFETY LAMP. Five styles and sizes, for all incubators and brooders. **Always safe and reliable.** Free from smoke and soot and more convenient and economical than any other, also **Compound Thermostatic Bars.** Manufactured by **L. R. Oakes,** Bloomington, Ind. Sold at **Topeka, Kan.** by J. P. Lucas; at **San Francisco, Cal.,** by Geo. H. Croley, 416 Sacramento St. Send for catalogue with testimonials.

POULTRY YARD SUPPLIES.
Wire Netting, Roofing Papers, Bone, Oyster Shells. Full line supplies. Send for Price List.
G. H. Brinton, Elwyn, Pa.

Wyckoff's White Leghorns,
America's Business Hen.
This seasons breeding stock consists of the choicest specimens selected from over 1,000 carefully bred birds, and are unequalled for size, vigor, show and superior laying qualities. Eggs $2.00 per 15, $3.75 per 30, $5.00 per 45, $10.00 per 100. Illustrated and discriptive circular free.
C. H. WYCKOFF,
GROTON, N. Y.

FERTILE EGGS FOR HATCHING,
FROM 600 HEAD OF LIGHT BRAHMAS, BLACK LANGSHANS, B. P. ROCKS, BL. MINORCAS, WHITE P. ROCKS, BUFF COCHINS, WHITE C. POLISH, WHITE WYANDOTTE, BROWN LEGHORN and PEKIN DUCKS. PRICE $1.00 PER SETTING. LT. BRAHMAS, B. P. ROCKS AND PEKIN DUCK EGGS, $6.00 PER HUNDRED, LOTS OF 500 OR MORE, $5.00 PER HUNDRED, AND $45.00 PER THOUSAND. Eggs carefully packed. **F. E. GOLDTHWAITE,** Willow Farm Poultry Yards.

"LA PLUME,"
THE IDEAL BUSINESS HEN.
Large size; full wide breast; solid white color; smooth, featherless yellow legs; rich, yellow skin; small, neat pea combs; no dark pin-feathers or other objectionable or unnecessary feature, but every inch bred for **Business.** They are unquestionable the **money makers** of the future. Will supply eggs only, at $6 per 13, $10 per 26, and as these prices will positively be maintained for several years, those who soonest get them will make the best investment. Cat. free. Address, **Sunnyside Stock Farm, La Plume, Lack'a Co., Pa.**

In the POULTRY KEEPER, January issue, 1894, under heading "How to Raise Chicks," **A. B. SHUNT, Canton, O.,** an experienced poultryman says: "One of the vital points is to give them water in such a way that they can't get their feet or bodies wet. That way is to use this patent stone ware fountain." Prices are F. O. B. car, Akron, O., in shipping order. ½ gal. per doz., $2.00; 1 gal. per doz., $2.60; 2 gal. per dozen, $4.00. Write for descriptive circular and discounts, enclosing 2c. stamp. Cash must positively accompany order. Address **F. H. WEEKS,** owner of patent and sole manufacturer, **Akron, O.**

WHY NOT SAVE EVERY CHICK

YOU HATCH?
When you can so easily do it by feeding them the F. P. C.
Chick Manna
Our sales are immense, and all those who have used it, as well as the Chicks themselves, **Sing Its Praises.**
1 lb. by mail, 25c.; 5 lbs. by express, 40c.; 60 lb. case, by express or freight, $4.00.
Our complete Poultry Supply Catalogue comes for the asking. It has a page for *Bee Keepers*, too.
JOHNSON & STOKES, 217 and 219 Market St., Philadelphia.

Eggs from White Faced Black Spanish and Silver Spangled Hamburgs, $2 per 13; $5 for 39.
M. A. WEIANT, Box 23, **Worthington, O.**

Do you want as fine B. Minorcas, W. Wyandottes, Bu., Bl., Br. Legs., Lt. Brabs., W. and B. P. Rks, S. S. Hambs. as in country? If so send to J. T. Wallace, Del. Water Gap, Pa. Cir. free. Eggs $1 per 13, Buff $3.

FOR SALE, EGGS. Buff Cochin, Light Brahmas, B and W. P. Rock, S. S. Hamburgs, Golden Wyandottes, per settings $1.00, two settings $1.75. Indian Games, per setting $1.25, two settings $2.25. Chas F. Penepacker, 322 Campbell St., Wilmsp't, Pa.

BOUND VOLUMES We have Volumes 1, 2, 3, 4, 5, 6, 7 8 neatly bound with complete index, for $1.00 each, postpaid. We have Vols. 2, 3, 4 and 5 combined, with complete index, in one volume, for $2.00, postpaid. They make handsome and valuable books.
Address **Poultry Keeper Co.,** Parkesburg, Pa

GRIND YOUR OWN Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **$5 HAND MILL** (F. Wilson's Patent). 100 per cent. more made in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS.** Circulars and testimonials sent on application. **WILSON BROS.** Easton, Pa.

MAPLE FARM DUCK YARDS.
The Largest Duck Farm in America
Our Imperial Pekin Ducks have won First Prem. in every New England State and nearly every State in the Union. We are prepared to furnish eggs in season. First-class birds at reasonable prices
JAMES RANKIN, South Easton, Mass.

THE FAMOUS WHITEWASHER and INSECT EXTERMINATOR, a machine for whitewashing henhouses, etc. With the machine and recipes for special solutions you can exterminate lice, roup, cholera, etc. Send stamp for cir. F. Schwarz, M'f'g., Fairfield, Conn.

HAWKINS
breeds America's best **PLYMOUTH ROCKS, Barred and White. WYANDOTTES, Silver and White.** More prizes awarded this strain than all others combined. Selected Breeding Birds that will produce winners. Finely illustrated catalogue of America's greatest poultry farm, free. Lock Box 4. **A. C. HAWKINS,** Lancaster, Mass.

Mammoth New Catalogue Almanac
AND GUIDE TO POULTRY RAISERS.
64 large pages, printed in colors. Description of all leading varieties of fowls. Over 50 fine illustrations. Plans for Poultry houses. Remedies for all diseases. Recipe for Poultry Powders. The finest thing out—everybody wants one. Only 10c.
C. C. SHOEMAKER, Freeport, Ill., U. S. A.

SPONGIA, For Roup. 25 cents by mail from the Pharmacy. **Boericke & Tafel,**
1011 Arch St., Philadelphia, Pa.
145 Grand St., New York.
36 East Madison St., Chicago.
627 Smithfield St., Pittsburg, Pa.
228 N. Howard St., Baltimore, Md.
170 W. 4th St., Cincinnati, O.
Oldest Homœopathic Pharmacy. Established in 1835.
The Poultry Doctor, 85 pp., 12mo, cloth, 50 cents.

BOOM THE LEADERS!
The two best poultry papers on earth are
FARM POULTRY ..... 50 cts.
and
POULTRY KEEPER ..... 50 cts.
We will send **both,** for one year, for **only 70 cts.**
I. S. JOHNSON & CO., Boston, Mass.

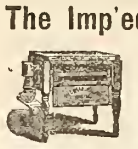
HATCH YOUR CHICKENS!
Brood them with the

IMPROVED JUNIATA **INCUBATOR AND BROODER.** The latest improved hatcher in the world. *Reliable, Perfect, Self Regulating.* Heated by a radiator. The most scientific incubator made. Guaranteed to hatch perfectly.
KEARNS & ALEXANDER,
Send 4c. for Catalogue. Yeagertown, Pa.

CAN be applied by any one on steep or flat roofs. **Extra Heavy** Felt for Poultry Houses $1.30 per 100 square feet, with Coating, Caps and Nails. Sample and circular free.
A. F. SWAN, 38 Dey St., N. Y.

ONLY $1.10! CANNOT BE EQUALED!
FARM POULTRY (Monthly) 50cts
POULTRY KEEPER (Monthly) ..... 50 "
FARM and FIRESIDE (Semi-Monthly) 50 "
MODERN COOK BOOK ..... 50 "
Total $2.00
All sent postpaid on receipt by us of cash or stamps, $1.10. Sample papers free. Address
FARM POULTRY,
Box F. P. BOSTON, MASS.

The Imp'ed Monitor Incubator.



Two medals and two diplomas awarded at the Great World's Fair on special points of excellence as follows: "Completeness of arrangement for securing uniform heat. Proper ventilation and moisture, with ease of operation." Send stamp for Cata. for special offer we will make you now. Address,
A. F. WILLIAMS, 18 Race St., Bristol, Ct.

OUR CATALOGUE FREE POULTRY SUPPLIES HARVEY SEED CO. BUFFALO N.Y.

LADIES!! Why Drink Poor Teas?
THE GREAT AMERICAN TEA COMPANY
When you can get the **Best** at **Cargo prices** in any Quality. Dinner, Tea and Toilet Sets, Watches, Clocks, Music Boxes, Cook Books and all kinds of premiums **given to Club Agents. Good Income** made by getting orders for our celebrated goods. For full particulars address
THE GREAT AMERICAN TEA CO.
P.O. Box 289. 31 and 33 Vesey St., N. Y.

WEBSTER & HANNUM CAZENOVIA N.Y. ALWAYS ON TOP
GREEN BONE CUTTER
CHEAP DURABLE AND WARRANTED
AWARDED 1ST PREMIUM OVER CUTTERS COSTING DOUBLE AND MORE AT GREAT INTERSTATE FAIR ELMIRA, N.Y. N.Y. STATE FAIR SYRACUSE, N.Y. AND 1ST AND 2ND PREMIUM AT WESTERN N.Y. FAIR HELD AT ROCHESTER, N.Y.
SEND FOR CIRCULAR

THE **Improved Victor Brooder**

Ends the trouble and increases the profits of poultry raising. Takes better care of the Chicks than a mother. Keeps them from being frozen or lost. Perfectly adapted for in or outdoor use. Glass covered, double decked, completely equipped. All sizes, all prices. Circulars *free.* Catalogue 4c.
GEO. ERTEL & CO., Quincy, Ill.

Valuable Books Given for Securing New Subscribers at 50 Cents Each.

No. of Subs.		Value
1	Hile's Book on Incubation	$ 25
1	Practical Caponizing	25
1	Standard American Poultry Book	25
1	How We Made the Old Farm Pay	25
1	Index to any Volume of POULTRY KEEPER	10
1	Poultry for Profit	25
1	Incubators and Brooders	25
1	Management of Young Chicks	25
1	"Poultry Keeper Special for 1887,"	25
1	"Poultry Keeper Special for 1892,"	25
1	Kendall's Horse Book	25
1	Temperance Volume	25
2	Complete Poultry Book	25
2	Diseases of Poultry	25
2	Breeders Egg Record and Account Book	25
2	Five Hundred Questions Answered	25
2	How to Tell the Age of a Horse	25
2	All About Broilers and Market Poultry	25
2	A. B. C. of Strawberry Culture	40
2	American Corn Husker	55
2	Knitting and Crochet	50
2	Indian Game	20
2	Moisture Guage	20
2	Willis' Veterinary Practice	65
2	Chicken Marker	25
2	Practical Poultry Keeping	50
2	Natural and Artificial Duck Culture	50
2	Silos and Ensilage	50
2	Small Fruits and Poultry	30
2	Fisher's Grain Tables	30
2	How to Select Cows	50
2	Standard and Commercial Poultry Culture	1.00
3	Gentleman's Long Leather Pocket Book	75
4	Kidder's Secrets of Bee Keeping	75
4	Mrs Parker's Complete Housekeeper	1.50
4	How to be Your Own Lawyer	1.50
4	The People's Doctor	1.50
4	Everybody's Paint Book	1.50
5	Ladies' Home Journal	1.00
5	Compendium of Cookery	1.00
5	Affleck's Farmers Record and Acc't Book	3.55
6	A. B. C. of Bee Culture	1.20
6	American Standard of Excellence	1.00
6	Philosophy of Judging	1.00
6	Guenon's Milch Cows	1.00
10	Cruden's Unabridged Concordance	2.00
10	Polyopticon	2.50
12	Blakelee's Cyclopedia	3.00
12	Caponizing Set	3.00
12	Webster's Unabridged (Reprint) Dictionary, (full sheep bound)	2.50

Eggs and Stock for Sale.—W. Wyandottes and S. C. W. Leghorns (Knapp Strain). Single setting $1; the above breeds crossed for broilers, $4 per 100. Hens all extra good layers. Eggs carefully packed in egg-boxes. Plenty of good references given. **B. H. NOXON, Elm St., Ithaca, N. Y.**

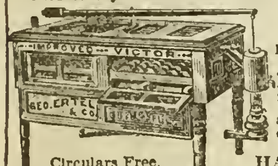
MONEY!!! NONEY!!! MONEY!!!

and now is the time to make it by raising early chickens. Get an Invincible Hatcher for $17.00 and start out right. Send 4 cts. in stamps for No. 75 Catalogue.
Buckeye Incubator Co., Springfield, Ohio.

"LIKE WILL BEGET LIKE."

700 selected S. C. B. Leghorns, Houdans, W. Wyans., Ply. Rocks and R. and S. C. W. Leghorns, sired by **"Ajax," "Leo," "White Prince," "Cody," "Sir Henry" and "Alexas,"** the grandest specimens of these varieties owned in America to-day. **At New York**, Feb, '90, won **4 grand Gold Specials, 8 firsts and 9** seconds on my specialties. *"Like did beget like."* I guarantee satisfaction. Send for Circular. J. FORSYTH, Riverside Poultry Farm, Owego, Tioga Co., N. Y.

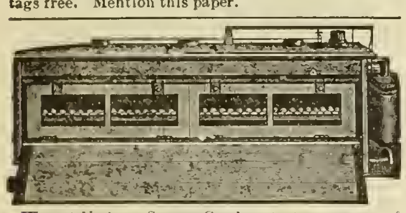
THE IMPROVED
VICTOR
INCUBATOR
Successfully Hatches Chickens by Steam.



Absolutely Self-Regulating.
The Simplest, Most Reliable and Cheapest First-class HATCHER in the market.
Circulars Free. Catalogue 4 cents.
GEO. ERTEL & CO., QUINCY, ILL.

SPRAGUE COMMISSION CO. 218 S. WATER ST. CHICAGO. COMMISSION MERCHANTS.

Reference, P. H. Jacobs.
—SHIP YOUR—
Broilers, Poultry, Eggs, Butter
And all other Produce to us.
We always get the highest market price and guarantee prompt and honest returns. Send a postal card and we will mail you market reports and shipping tags free. Mention this paper.



Won at Madison Square Garden, 1892, 1st prize of $25 in gold for largest and best hatch, and 1st $25 in gold for best machine in show.

THE IMPROVED MONARCH INCUBATOR. 3000 chicks from one machine in less than four months. Prices reduced, making it the cheapest as well as the best machine on the market. Thousands in successful operatioo in this country, Canada and in Europe. They are giving universal satisfaction everywhere. First premiums at 27 consecutive shows. More than 100 in use within a radius of 30 miles of our factory, some of the farmers using from 2 to 8 machines. Send 2c. stamp for new illustrated circular.
Jas. Rankin, South Easton, Mass.

"Everything For The Poultry Yard."
Poultry and Supplies!
MOST COMPLETE STOCK IN AMERICA.
PRICES GUARANTEED THE LOWEST.—Distance no obstacle; we equalize freights and ship everywhere.
Our Breeds:—L. BRAHMAS, BUFF COCHINS, PLYMOUTH ROCKS, LANGSHANS and W. WYANDOTTS.
Do You Want Our Catalogue?
60 pages, finely illustrated, full of information; it tells all; send for it to-day and MENTION THIS PAPER.
MICHIGAN POULTRY FARM,
Geo. J. Nissly, Prop. SALINE, MICH.

SIMPLEX HATCHER.

The Most Simple and Perfect Incubator Made.
Quick and certain; Hatches every egg that a hen could hatch; Regulates itself automatically; Reduces the cost of poultry raising to a minimum.
Best in every way—lowest in price.
Send for Illustrated Catalogue.
SIMPLEX HATCHER CO., Quincy, Ill.

Leghorns and Beagles. R. C. W. and Brown and S. C. Brown and Buff Leghorns and S. S. Hamburgs. 6 Beagles, 5 mos., from Reg. stock, for sale.
H. J. BROWN, Harford, Cort Co., N. Y.

HIGHEST AWARD. WORLD'S FAIR. 3 MEDALS DIPLOMAS.
INCUBATOR ON TRIAL
NOT A CENT UNTIL AFTER YOU HAVE TRIED IT
STAMP FOR CATALOGUE
NAME PAPER. BOOK INCUBATION 5 CTS. SET PLANS BROODER HOUSES &c 25 CENTS
VON CULIN INC. CO DELAWARE CITY, DEL.

A SPLENDID OPPORTUNITY
TO OBTAIN A
High Class Religious Weekly Paper.
SABBATH -:- READING.
A SIXTEEN-PAGE PAPER,
NO POLITICS,
NO SECTARIANISM,
NO SECULAR NEWS.
Nothing but the BEST READING for Sunday

Live Reports of City Missions, showing what is being done in New York among the degraded and outcasts of both sexes; how they are invited to meetings, how they become converted, their testimonies for Christ, etc., etc.
Sermons, Sunday-School Lesson, Treatment of the current Christian Endeavor Topic, Mothers' Afternoon with the Children, and other most interesting Sunday reading.

The publishers of THE POULTRY KEEPER have made arrangements whereby the following unprecedented offer can be made:

TO ALL WHO SEND US
75 CENTS
we will send the POULTRY KEEPER for a year, and will also send
SABBATH READING
For a whole year
postpaid, absolutely free.

This is a grand opportunity to secure, free of all cost for a year, one of the best religious weekly papers published. Just think, a 16-page paper, stitched and trimmed, 52 weeks. Send to us for a free sample copy of *Sabbath Reading.*

POULTRY KEEPER CO.,
Parkesburg, Pa.

MONEY SAVED!

☞Order your periodicals of us, and save money. Look at this list, and see that you get in many instances two papers for less than the price of one.

	Publisher's Price.	Price with our paper included.	Our Price Alone.
Amateur Sportsman, N. Y.	$1 00	$1 05	$ 85
American Agriculturist	1 50	1 65	
" Bee Journal, Chicago	1 00	1 45	95
" Farmer, Springfield	50	85	[illegible]5
" Poultry Advocate	25	65	2[illegible]
" Stock-Keeper	1 00	1 35	90
Art Amateur	4 00	3 95	3 [illegible]
Arthur's Home Magazine	1 00	1 20	85
Babyland	50	85	[illegible]
Breeders' Gazette	2 00	2 25	1 8[illegible]
Century	4 00	4 05	3 75
Chicago Weekly Inter-Ocean	1 00	1 40	95
Christian Herald	1 50	1 70	1 30
City and Country	50	80	45
Cosmopolitan	1 50	1 85	1 45
Cultivator and Country Gentleman	2 50	2 40	2 00
Demorest's Monthly Magazine	2 00	2 15	1 75
Detroit Free Press	1 00	1 45	95
Dog Fancier	50	80	45
Fanciers' Monthly	1 00	1 25	90
Fanciers' Review	35	65	30
Farm and Fireside	50	95	45
Farm and Home	50	80	45
Farm Journal	50	70	40
Farm Poultry	50	70	40
Farmer's Review	1 25	1 60	1 15
Frank Leslie's Ill. Newspaper	4 00	4 00	
" Popular Monthly	3 00	3 00	
Game Breeder	95	1 20	80
Game Fanciers' Journal	50	80	45
Game Fowl Monthly	1 00	1 10	75
Gefluegel Zuchter	50	85	40
Godey's Magazine	3 00	3 30	2 90
Golden Days	3 00	2 95	2 60
Harper's Bazaar	4 00	3 90	3 60
" Monthly	4 00	3 90	3 60
" Weekly	4 00	3 90	3 60
" Young People	2 00	2 20	1 85
Home Queen	50	70	40
Horseman, Chicago	4 00	3 85	3 60
Household	1 10	1 30	90
Housekeeper, (Minn)	1 00	1 25	90
Lippincott's Magazine	3 00	3 00	2 60
Ladies' Home Journal	1 00	1 30	90
Michigan Poultry Breeder	50	75	45
National Stockman and Farmer	1 50	1 70	1 35
New England Fancier	50	75	45
New York Tribune, weekly	1 00	1 25	95
" World, weekly	1 00	1 40	75
Our Little Ones	1 50	1 60	1 25
Peterson's Ladies' Magazine	1 00	1 35	90
Philadelphia Weekly Press	1 00	1 40	95
Philadelphia Weekly Times	1 00	1 40	95
Phrenological Journal	1 50	1 60	1 25
Poultry Chum	50	60	25
Poultry Journal, (American)	25	1 00	75
Poultry Journal, (Ohio)	1 00	95	60
Poultry Herald	65	80	45
Poultry Monthly	1 00	1 25	90
Poultry Topics	25	60	20
Poultry World	1 25	1 30	1 00
Poultry Yard, (American)	1 50	1 70	1 35
Practical Dairyman	50	70	40
Practical Farmer, Philadelphia	1 00	1 25	90
Practical Poultryman	40	85	45
Prairie Farmer	1 00	1 30	90
Presbyterian Journal	2 00	2 10	1 75
Scientific American	3 00	3 20	2 85
Southern Fancier	50	90	45
The Fancier (Pigeon)	1 00	1 20	85
Toledo Blade	1 00	1 40	90
Vick's Monthly Magazine	50	75	40
Western Poultry Breeder	25	60	25
Western Poultry Journal	50	70	45
Wide Awake	2 40	2 60	2 30
Youth's Companion, new subs only)	1 75	1 80	1 40
Youth's Companion, ((renewals)	1 85	2 30	1 90

BONE AND SHELL FOR POULTRY.

Raw Bone has been proven by analysis to contain *every part of an egg—White, Yolk and Shell.* The lime of oyster shells furnishes shell material. The *granulated* size is for *adult* fowls: the *meal* is for *chicks* and mixing with soft food. For circular explaining benefit and how to feed it, and prices on lots of 100 lbs or more delivered, freight paid at your railroad station, address
FITCH FERTILIZER WORKS, BAY CITY, MICH.

THE BEST POULTRY FENCES,
Galvanized Wire Nettings.
REDUCED PRICES FOR ROLLS 150 FEET LONG.

	12	18	24	30	36	42	48	60	72 Inch.	
2 Inch No. 19.	.75	$1.15	$1.50	$1.90	$2.25	$2.65	$3.00	$3.75	$4.50	Per Roll.
1 Inch No. 20.	$1.75	$2.75	$3.50	$4.50	$5.25	$6.25	$7.00	$8.75	$10.50	Per Roll.

Discount 5 rolls 5 per cent, 10 rolls 10 per cent. ⅞ inch Galvanized Staples, 10 cents per pound.
PETER DURYEE & CO., 215 Greenwich St., N. Y.
SPECIAL NOTICE.—Write for freight allowance on five or more rolls, and price list of other styles Wire Fencing.

The Prairie State Incubators and Brooders,
Are Endorsed by P. H. Jacobs.
94 FIRST PREMIUMS 94.
Hundreds of our Customers Use from 10 to 30 Machines.
Do not buy an Incubator or Brooder until you send for our **104 page Catalogue giving full particulars.**
ALL MACHINES WARRANTED.
PRAIRIE STATE INCUBATOR COMPANY,
HOMER CITY, PENNA.

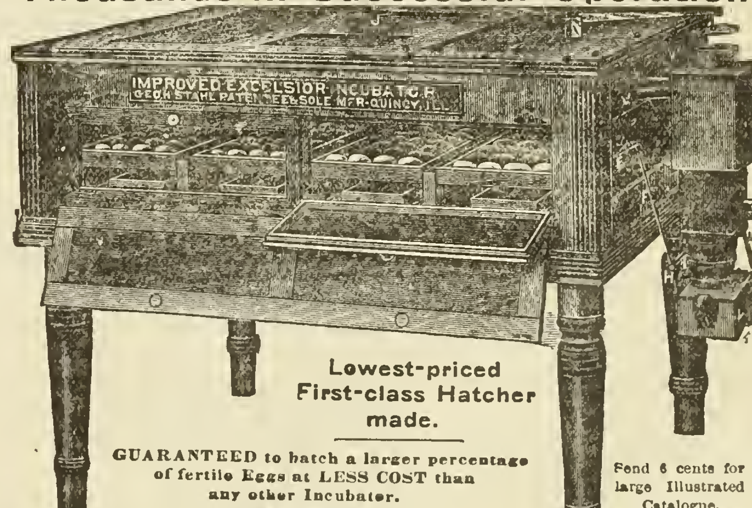
How To Make Money
WITH
A FEW HENS
Is the Teaching of
FARM-POULTRY.
A Live, Practical Poultry Raising Guide.

It is acknowledged to be **"The Best Poultry Magazine Published"** in the world.

Send for Index to last Vol. free, and judge yourself, if as much complete, instructive, practical matter regarding poultry raising and how to obtain the best market prices can be found in any volume costing four times the price of FARM-POULTRY one year. Subscriptions can begin with any back number you desire.

Are you keeping Poultry for profit, either in large or small numbers? No matter if you keep only a dozen hens; are they paying you a profit over and above their keep, and the eggs used in your own family? Do you care to learn how others make their hens pay $2.50 each per year from eggs alone? Then subscribe to FARM-POULTRY. **"What has been done, can be done again."** Remember the price; 50 cts. one year; six months 25 cts.; sample free. Remit cash or stamps. **I. S. JOHNSON & CO., Boston, Mass.**

HATCH CHICKENS BY STEAM.
THE IMPROVED
EXCELSIOR INCUBATOR
WILL DO IT.
Thousands in Successful Operation.



Lowest-priced First-class Hatcher made.

GUARANTEED to hatch a larger percentage of fertile Eggs at LESS COST than any other Incubator.
Double-Regulator.

Send 6 cents for large Illustrated Catalogue. Circulars Free.

SIMPLE, PERFECT, and SELF-REGULATING.
GEO. H. STAHL, QUINCY, ILL.
PATENTEE AND SOLE MANUFACTURER.

Golden Laced Wyandottes,
The Genuine Original McKean Strain.

Large, fine, choice, thoroughbred, evenly laced specimens of this grand breed, carefully mated to produce fine stock

EGGS FOR HATCHING,
Fresh laid, carefully packed in baskets to safely go any distance by express.
Price, 13 for $1.50, 26 for $2.50.
All Orders Promptly Shipped.

No breed of fowls have yet been received with so much excellent favor and good qualities as the Golden Laced Wyandottes.

GOLDEN WYANDOTTE CHROMOS, size 9½x11 inches, elegantly chromo-lithographed in six different colors. 4 cents each, postpaid, by mail. Address,

A. J. FOUCH, Warren, Pa.

Sussix Poultry Yards. Five Sil. Wyan. (Hawkins strain) Cock's for sale. Bar. Ply. R'ks, Hawkins and Thompson Sts. Eggs for Incu. $8 per 100, select eggs $2 per 13. A. N. Cosner, Proprietor, Deckertown, N. J.

EGGS. Get the best. W. P. Rocks, Sil., Gol and White Wyandottes, S. C. Brown Leghorns $1 per 13. Red Caps, $1.25, Buff Leghorns, a solid Buff, $2 per 13. **WM. McCABE, Kelsey, Ohio.**

BUREAU OF INFORMATION.

This Department is "Replies to Inquiries," and is Open to all.

Eggs for Hatching.—1. How long before using the eggs for hatching should fowls be mated? 2. Are fifteen females and one male too many? 3. Are eight or nine months old pullets too young?—D., Ellenburg, Neb.

1. About a month is best, but we have noticed good results in ten days. 2. It is about right for small breeds. 3. They are not too young.

Twitching.—My Black Minorca shakes his head every minute or so, goes back a few steps, utters a sound like "*chick.*" very short, and again begins to eat, but continues to utter the sound.—J. S., Scranton, Pa.

It may be due to the comb itching, or to nervousness. Anoint the comb and head, once a day, with sweet oil.

Rabbits as Meat.—1. Is wild meat, such as rabbits and squirrels, good for poultry? 2. Will it be as good as beef? 3. Do ducks need grit?—F. W. P., Clio, Iowa.

1. Yes, any kind of lean meat will answer. 2. Yes. 3. They are very fond of ground oyster shells.

Mating.—1. Are ten hens too many with one male? 2. How long should he be mated with them before using the eggs. 3. Would seventy common hens lay as well without the male being with them?—T. A. S., Albion, Ind.

1. Ten hens, of the large breeds, and fifteen of the smaller breeds, is the proper proportion. 2 About a month. 3. They will lay just as well if no male is present.

Crossing.—What kind of a cross would a Brown Leghorn cock and a White Plymouth Rock make, for eggs, and what size and color?—W. J. C., East Orleans, Mass.

The cross is as good as any, but keep your birds pure if possible. The progeny will be mixed, of various colors, and but little larger than the Leghorn. They will not lay as well as the pure Leghorn.

Grit.—I send you a sample of grit. It contains thirty-five per cent. of silica, thirteen of aluminum, and fifty-two of lime, with a trace of sulphur. The hens eat it readily. Will the fowls utilize any portion, or is it simply grinding material?—S. M. E., Birmingham, Ala.

It will serve well as grit, but it is doubtful if it will answer any other purpose.

Brown Leghorn Description.—Will you give me a description of a pure-bred Brown Leghorn cockerel?—J. T., Ottawa, Kan.

As such a description would be lengthy, we suggest that you send for our Nov. 1888 POULTRY KEEPER, which describes Light Brahmas, Plymouth Rocks, Brown Leghorns, Houdans, etc., five columns of description.

Doubtful.—A lady here, who is successful in getting a large per cent. of pullets from eggs, says her success is due to using a male never under three years old with pullets. Is it correct?—F. R. G., Wolboro, N. H.

We doubt her claim, though she may suppose it to be true, but it will do no harm for our readers to try it.

Sundry Inquiries.—1. Are sixty-five pullets too many in a house 12x20 feet? They have free range. 2. Will turkeys stand the cold when the thermometer is down near zero, when they roost on trees? 3. I have a Muscovy drake that weighs 12¼ pounds. Can I use it to cross with Pekin?—J. W. W., Haverstraw, N. Y.

1. About one-half that number would be enough for the house. 2. Yes, but they will be liable to roup and frosted feet. 3. Yes.

Millet Seed.—1. Is millet seed or sorghum seed good for poultry? 2. Are large Brown Leghorns as good layers as those that are smaller? 3. What is the standard weight of Leghorns?—J. W. B.

1. The seeds are excellent. 2. Yes. 3. They have no weight assigned them.

The New Standard.—1. When will the new Standard be out? 2. Where can I get a list of awards at the World's Fair?—J. W. A., Lilly Chapel, Ohio.

1. About April. 2. We are unable to give the information.

Ducks and Chickens Together.—Can ducks and chickens run together and feed at the same food? How many should be together? My ducks and hens do not lay.—D. J. B., Hartleton, Pa.

They should not be together at all, as they quarrel and interfere with each other. Your fowls are probably overfed by having too much grain.

Florida.—As I am moving to Florida, would it be well to take some of my prime layers? How is Florida for chicken raising?—G. R.

It would be an advantage to take them. Florida is an excellent location for poultry, but there will be more insect enemies.

Langshans.—Are the Black Langshans as hardy as other breeds, and are they good layers? How long should a male bird be kept?—W. P. M., Aledo, Ill.

The Black Langshan is a hardy breed, fine for the table, and the hens are good layers. A male bird should not be over two years old.

Difficulties With Chicks.—What cure would you suggest for chicks with weak legs, and what causes them to become bald?—J. T. D., Pattersonville, Ohio.

It may be due to bottom heat in brooder, or to rapid growth. You did not state the kind of brooder used. The bald spots may be caused by parasites or to the heads touching the brooder pipes (if any). Keep them warm. Brooder room should be 80 degrees and brooder 95.

Lice and Tarred Paper.—My brooder house is lined with tarred paper. Will I have to remove it in summer, to avoid harboring places for lice, or should it receive a coat of tar paint?—W. M. D., Denver, Colo.

It is not necessary to remove it. Paint with tarred paint, and then saturate occasionally with kerosene or the kerosene emulsion.

Charges for Hatching.—What are the regular charges for hatching chicks in the incubators?—H. D., Montgomery Station, Pa.

About five cents per chick if you furnish the eggs is about the usual price.

Death to Lice.—From whom can we procure Mortimer's "Death to Lice?"—W. B. C., San Antonio, Tex.

From W. P. Mortimer, Pottsville, Pa.

Weight of Leghorns.—What is the standard weight of White Leghorns?—A. C., Port Severn, Can.

There is no weight applied to them. Six pounds to seven is about the weight of a cock.

Scraps.—Are scraps from a lard press suitable for fowls?—E. P. H., Marcellus, Mich.

We do not approve of their use for producing eggs.

Flesh-Color Shanks.—Are flesh-color shanks on a Light Brahma cockerel a mark of impure blood?—C. S. R., Craters, N. C.

A Light Brahma should have *yellow* legs. Possibly you are mistaken as to the color.

Difference in Leghorns.—Is there any difference in the laying qualities of Single-comb Brown Leghorns and Rose-comb Brown Leghorns?—A. A. T., Uniontown, Pa.

There is no difference in any respect except in shape of the comb. They are otherwise exactly alike.

How Many Drakes?—What proportion of drakes should be with a flock of Pekin ducks?—L. H., Denison, Kan.

One drake and five ducks are the usual proportion.

Shipping Eggs.—Do you think it would pay to ship eggs from here (165 miles from St. Paul) to New York. I have thirty pullets, and am getting ten eggs a day. Am getting only fourteen cents per dozen Eggs went down from twenty-one to fourteen cents, at a jump.—A. O., Ada, Minn.

It would not pay you. Eggs are now down in New York also. The warm winter in the East lowered the price, but farmers are getting more eggs, however.

Ducks.—Will ducks lay well if no drakes are with them? I only want the eggs?—C. B. K., Dana, Iowa.

They will lay as many eggs as if drakes were with them.

A Year's Prices.—I would like the prices of poultry and eggs for every month in the year.—A. B., Henderson, N. C.

Our POULTRY KEEPER of Feb., 1888, and April, 1892, gives the prices for every week in the year, for New York and Chicago, of broilers, eggs, chickens, ducks and turkeys.

Commission Merchant.—Can you recommend a reliable commission house in Chicago?—S. S., Ottawa, Ill

The Sprague Commission House, 218 S. Water street, Chicago, is an old reliable house.

Mann Bone Cutter.—Does the Mann Bone Cutter cut green bone fine enough for little chickens?—E. J. K., Westboro, Mass.

Yes; the knives, which are adjustable, can be set so low as to get a product almost as fine as meal. Poultrymen, as a rule, do not care to cut bone any finer than is necessary. They know that fowls require coarse food. The Mann Bone Cutter, however, is so constructed that it fills all requirements and will cut both fine and coarse as demanded.

Green Bone.—Should they be cut very fine or coarse?—Dr. H. S. P., Albany, N. Y.

Generally speaking, they can be cut quite coarsely, as the meat which we are after in them will certainly be digested and the small, hard pieces of bone will act as grit and take the place of and be better than oyster shells. Then again, there is much labor lost making the hard bone unnecessarily fine. Let the hen's digestive apparatus do some of the work. Do not cut the bones any finer than necessary.

THEY GET LOTS OF VENTILATION.

Mr. L. C. Foy, Kembleville, Pa., has trouble with his Leghorns, and he writes us to know the cause, which he explains himself. Mr. Foy says:

What is the matter with my chickens? They commence to mope around, combs get a dark color, and after a few days get their necks stretched out, with their heads close to the ground. They are not blind. They stop eating in a week and die. They are Leghorns, and have been laying. They have a good, sunny place to scratch in all day. They get wheat and corn. Their roosting place has lots of ventilation.

They get lots of ventilation, he says. Well, it is just *that* which has done the damage. The cold draughts have come down on them, and they catch it right on the heads and necks. In winter we find it better to try *suffocation* and *foul air*, (if you can get it), as we never knew of a fowl being killed in that manner in *winter*, but thousands die of *ventilation*. The cold air *cannot* easily be kept out. Let some of our readers shut off their stoves and open the windows of their dwelling houses in winter, and they will find what it is to ventilate a hen house. Mr. Foy should nail it up as tight as he can, and his hens will get well. Keep them on straw, and not on roosts.

PROFIT IN GEESE.

As many readers have inquired in regard to geese, and desired to know *where* geese were kept in large flocks, we give an extract from a letter to the Indiana *Farmer* (Indianapolis), from a lady, Mrs. W. W. Stevens, of Salem (no *State* given), who relates her experience as follows:

"The last eight years has not found our flock numbering less than 100, and, perhaps the most successful year was when the flock numbered 300 adult geese. By my persisting so emphatically that there was more money in geese than any other farm animals I have been given the title of "Goose Woman."

With the flock well culled we get one pound of feathers from three geese on an average, and have in midsummer gotten one pound from two geese or thirty pounds from sixty choice birds, but we pick only seven times per year, and do not like to strip them in February and March.

Our flock has averaged for ten years at least twenty-four eggs. I made a present of a trio to a friend, and they had of course good care and the two geese laid sixty-four eggs. But we have never been able to get 500 goslings from that number of eggs. We cull the smaller and least desirable geese out in the fall, and when ready for the home table or market they weigh from fifteen to eighteen pounds, and while there is not as large a demand for them as for turkeys, we get the same per pound. This year we got seven cents per pound for fifteen pound geese, or one dollar and five cents each.

Breeding geese should not be fat, as they become broody and will not lay as many eggs as if thinner, but we have never weighed a goose that did not weigh twelve pounds, and have had pairs that weighed forty pounds.

Now let us figure a little. If my fondest hopes are all realized I will some time have 1,000 geese, 600 of them layers and 400 ganders. I will have a goose herder during the laying season, and will expect to get twenty eggs from each goose, or 12,000 eggs in all. With good care I can hatch 9,000 goslings and if I raise 8,000—as I ought to—can make them weigh twelve pounds each, or 96,000 pounds.

Geese during the holidays were quoted not lower than eighteen cents per pound in Boston, but it may take half of that to put them there and we will figure on nine cents, which will give me $8,640 for my work. I do not count feed anything as the feathers will pay for that and the herder besides. When I reach this much desired goal I will fatten the old geese, and sell them also, for 'tis said that "success spoils some people," and it might not be best for even me to try two years of this kind.

This may seem to be all hosh, but I verily believe that even better than this can be done where land is cheap and water is plenty, and the persons undertaking it are energetic and business like. At least, as a "stream never rises higher than its source," and "one never shoots higher than they aim," it is well to set our mark high.

When one has running water and blue grass pasture, breeding geese need no feed when the ground is not frozen or covered with snow. Our flock has not had a peck of corn yet this winter, and I see no reason why they can not be kept in as large flocks as one wishes. They do not have lice and no contagions of any kind that I ever heard of and with a large flock one is more apt to look after them carefully.

The above will convey many points about geese, although we fear the lady will have quite a job with 1,000 old geese and 8,000 goslings, yet it is not impossible. She claims to have been successful so far, and we do not doubt that she will largely increase her flock and make money thereby, as she has *experience*, which is more valuable than capital.

THE SPRAGUE COMMISSION COMPANY.

The Sprague Commission Co., No. 218 South Water street, Chicago, is one of the old reliable houses that handle poultry as a *specialty*, and we have never had a complaint against them. They will hereafter report prices for Chicago to us regularly. Below they give prices up to Feb. 9th. The "hard times" in Chicago have had something to do with low prices this year, and prices in the East are also lower than usual. They write as follows:

"We do not look for quite as high prices on broilers this year as there has been, for everything is dull. Last year at this time turkeys were selling at about fourteen cents per pound; now they are selling at seven to nine cents. Hen turkeys are selling at nine cents and young toms at seven cents. Live chickens last year were selling at this time at twelve to twelve and one-half cents; now they are selling at about seven cents. Dressed chickens were selling a year ago at twelve and one-half to thirteen cents; now they are selling at about eight cents. Eggs a year ago were selling at twenty-five to thirty cents, and now they are selling at thirteen and one-half to fourteen and one-half cents. So you see, taking everything else into consideration, broilers are bound to sell lower. Still the supply of broilers is not very large, and has not been for the last year or two, the people who are raising them getting tired of the business, as it is too much trouble."

We believe, however, that in April and May the prices for broilers will be good. February is rather soon for them. Should business improve to any extent a demand will spring up, but at present many former consumers are unable to buy as freely as last year. We can state, however, that prices are low in other branches of business also, the moderate winter also largely increasing the supply of eggs compared with last year.

PRIDE IN THE FLOCK.

It is no discredit to be accused of having the "hen fever." It simply means that you love a beautiful bird, and take pride in being the possessor of such. All who keep poultry should strive to excel. In no other manner can we best secure improvement. The love of fancy poultry is confined to no particular class. The millionaire and the laborer stand side by side, and each can compete with the other.

PUBLISHER'S DEPARTMENT

BOUND VOLUMES (four in one) were at first advertised to be sent by express at receivers expense, but since being completed we find can be sent by mail, post-paid, for $2.90, which, in most cases, is much the cheaper plan, but when parties prefer to have them by express, and pay charges on arrival, they will be sent for $2.50. They weigh five pounds.

Please note that by enclosing sixty cents for the POULTRY KEEPER one year instead of fifty, you can have your choice of any of the following, or seventy-five cents any two: Fisher's Grain Tables, one year. Poultry for Profit (Jacobs), Incubators and Brooders (Jacobs), Management of Young Chicks Jacobs).

Probably the best Ladies' Magazine in the world is *The Ladies' Home Journal*, of Philadelphia. Price $1.00 per annum, sample for 10 cents. *The Ladies' Home Journal* and THE POULTRY KEEPER both one year for only one dollar and thirty cents.

SELF BINDERS.—We have self binders, whereby each subscriber can bind their own POULTRY KEEPER each month as received. They hold two years' numbers Price sixty cents, postpaid

INDEX TO VOLUME X.

Admonition, An 62
Advertisements 12
13, 14, 15, 29, 30, 31, 45, 46, 47, 62, 63, 78, 79, 94 95, 110, 111, 126, 127, 141, 142, 143, 157, 158, 159, 169, 173, 174, 175, 185, 188, 189, 190, 191.
Age of Poultry, Judging the 28
Albinos Among Animals 105
Alfalfa, Mrs. Mellette and Our 76
All-Purpose Medicine, An 188
Amateurs 28
American Birds in England 60
Andalusians, Breeding Blue 83
A. P. A. Meeting, The 72
Are Heavy Weights Desirable? 39
Are They Frauds? 187
Arrangements for Poultry 170
Association—
Toronto Poultry 73
Washington State 33
Autumn Management of Poultry 123
Bad Showing, A 187
Baker's Refuse 97
Bantams—
For Eggs 58
Profitable? Are 23
Rare Varieties of 28
Barn-yard Refuse, The 70
Beans and Peas for Poultry 86
Beats the Hens 116
Begin the New Year Right 155
Better Get Out 89
Bill of Fare, Keeping the 102
Binders, Those 25
Black Javas 133
Black Javas to the Front 106
Blind in one Eye Only 171
Blood for Poultry, Utilizing 10
Bone—
Analysis of 145
And Bone Meal 36
And Clover 34, 108
As Food 49
Fineness of 26
Meal, The Proper Character of 86
Or Oyster Shell 155
Bone Cutter—
Is King, The 9
The Daisy (Illus.) 35
The Mann. (Illus.) 124
Books at Five Cents Each 57
160, 172, 187.
Boston vs. Hammonton—
Hon. Edward Atkinson has an Inning .....
The Public's The Umpire 171
Bound Volumes 40, 121
Brahmas, Scotch 113
Brahmas vs. Leghorns 150
Bran and Middlings 114
Bran and Oats in Summer 91
Breaking up a Hen is Cruelty 133
Breeders, The Tennessee 62
Breeds—
Admitting New 7
Advantages of Small 21
And Utility, New 89
Be Crossed, Should Pure 86
Care in Keeping 27
For Improvement, Pure 122
For Laying 154
Hardiness in 106
Invigorating the 122
New 72, 104
Only, One 99
Special 94
The Best 8, 92
The Different 177
The Large 114
The Very Best 170
They Are Good 166
To Select, The 98
Value of Purity of 172
Which Is the Best 46
Breeding, Errors of—
Eggs and Not Feathers—Our Breeds Should Be Improved—How to Begin 18
Breeding—
Fowls, For What Are We 123
Old Hens for 155
Yard, The 151
Brief Remarks From Readers—
Good for January—Keeps 150 Hens—Eggs Too High—Twelve Hundred Capons—Good Prices—The Aylesbury Duck—A First Hatch—Roup in Turkeys—Mortimer's Chick Feed—Spanish Brown—Good Results With Incubators—Cold Weather Laying—Good Results—Made $1.35 per Hen—Advice to Follow—Leghorns and Minorcas—A Proposition—Light Brahmas—January Results—The Way to Do It—Roup—Controlling Vicious Roosters—What It Costs Per Hen—An Experiment in Heating Poultry Houses—The Cow and Hen Story—A Live Roost—A Large Poultry Farm—Leghorns as Winter Layers A Good Drinking Fountain 7
Excellent Laying—Early Laying Pullets—Lay Every Day—Made a Mistake—Prefers the Old Style—Adopts the Old Method—Western Prices—Braden and Piety—The Wife and the Hens—Heavy Eggs—A Friend in Need—A Good Incubator Test—Out of Business—Good Laying Brahmas 21
Preventing Gapes—Bowel Trouble—Full House—Complete and Reliable—Rupture of the Reproductive Organ—Fed to Keep Warm—Hooper's Condition Powders—Color of Young Chicks—Seventy Per Cent. Hatches—Poultry in California—The Moisture Question—Poultry on Town Lots—All Men Equal—Likes It Best of All—Corn Feeding—Granulated Oat Meal—Equalized the Heat—Big Laying—Sandy Soil—Left the Eggs Alone—Hen Was Too Fat—Cured Crop Bound—Worth a "V."—It Must be Studied—A Good Beginning—Butter and Eggs—Poultry in Canada—Cuts Jack Rabbits 39
Wants an Incubator—Use of Kerosene—Carbon-di-Sulphide—Due to an Injury—Eggs Got Cold—Thanks the New Editor—Dampness—"Great" is the Word—Too Many Cocks—Chock Full—Good Laying—Shanghias—Lice—Quick Laying—Copperas for Roup—Drinking Fountain—Made an Incubator—In for Life—Don't Like Scrubs—Big Eggs—Head Lice—Contrary Hens—A Good Showing—Feels Grateful—Double-Yolked Eggs—Don't Like Eggs 54, 55
Early Laying—Poultry on a City Lot A Natural Gas for Brooding—Fowls for Cold Weather—Millet Seed—Good for a Start—Setting Turkeys—A Good Beginning—Dead in the Shell—Keeping Hens Healthy—Best in the World—Incubator-Hatched Chicks—Within the Reach of All—Fed Salt by Mistake—Feed for Fifty Hens—Hatching Fractured Eggs—Keeps Fowls in Condition—Eggs a Specialty—Carbon Di-Sulphide—Gapes 69, 70
Too Much Stock—Gets 85 Per Cent—Mended the Eggs—Information for the South—No Trouble with Lice—Found Lice at Last—Combs will Freeze—Thinks we are Off on Corn—"Fills the Bill" 86
Insect Powder Not Injurious—Homeopathic Remedies—In for the War—Very Early Laying—Big Turkey Trade—Hatching With Moisture—Wants Information—Well Worth $5.00—Uses Insect Powder—A Good Hatch—Cure for Gapes—More Powder Experience—Lime Water—Insect Powder Again—Uses Natural Gas—A Grand Hatch Good Weight—Cholera—Bought Lice with the Farm—Has 3,000 Chickens—A Louse Remedy—Leg Weakness—Creasote for Roup Success With Thoroughbreds 102
Good for a Beginning—Has 200 Hens Feeding Meat—Must Eggs Rest?—Packing Houses for Poultry—Hot Water Incubator—Broody Hens—Persian Insect Powder for Gapes—Good Hatching—Remedy for Crop Bound—The Brooder—Incubator Experience—Will Strike Higher—Uses Hydro-Safety Lamp—A Curious Cross—Nest Eggs in Winter 118
For Mr. Johnson—Lost Lots of Time—Making a Hen Broody—For a Small Beginning—A Sure Cure for Scaly Leg—Small Eggs—Three Times a Day—How He Got Good Hatches—Eggs by the Car Load—Only a Cent a Week—A Long Distance Hatch—Slaughter by Dogs—Poultry House—It Don't Seem Possible—Black Javas—His First Experience—A Thermostat—Minorcas 134, 135
Marked the Whole Paper—Egg-Eating Hens—Be a Little More Particular—Cold Ashes and Lice—An Excellent Poultry House—A Single Number Paid—Plymouth Rocks as Layers—Keeping Accounts—Good Hatches—Wyandottes—A Record of Ten Hens—From Utah—From New Zealand 149
Scotch Terriers—Will Keep Over a Hundred—Good for the Lady—Ventilation—Cold Climate Best—Believes in the Breeds—Will Try Large Numbers—A Turkey Laid Eighty-five Eggs—Cleared Eighty Dollars—Keep It Coming—Light Brahmas—Nearly 3,000 Eggs—Made a Mistake—His Paper Did It—Alum Water for Sore Heads—Eggs Should Be Tested—For South Jersey Breeders—Has a Big Flock—Coal Tar For Lice 165
Broilers—
A Point on 165
All About 104, 168
And Eggs 18
Factory, Ex. Vice President Morton's 59
He Hatched 2,000 161
Leghorn 23
Market, The 83
Selling the 35
Shipping 125
Will he High 28
Broken Flint and Lime 137
Broken Flint and Grit 123
Bronze Turkeys, Mr. Munger's (Illus.). 119
Brooder House Designs 155
Brooder Houses 56
Brooders—
Baby Biddies and 38
Care of Chicks in 103
Chicks in 12
The King of 177
Warmth in 103
Brooding Question, The 42
Brooding Small Chicks 51
Broody by Fattening 101
Broody Hens 102
Broods, Doubling the 181
Broods, Young 125
Bro. Hunter's Surprise 171
Brown Leghorns 1 5
Buckwheat Patch, A 83
Bumble Foot 105
Bureau of Information—
Lice in the Incubator—Climate and Houses—Dubbing Games—Moisture in Incubators—Medicines—Lice—Which Kind—Wyandottes—Picking Pekin Ducks—Drinking Vessels—Brown Leghorns—Ducks—Crossing—Markets—Sunflower Seed—Bowel Disease—Lump—Droppings Roupy Stock—Leg Weakness—Chick-a-Dots—Bone Mills—Animal Meal—A Crowing Hen—Hay and Manure—Golden Wyandotte—Prices of Broilers—Commission Merchants 16
Brooder—Small Eggs—Poultry Supplies—Eureka Brooder—Gobbler—Malays—Green Food—Caponizing—Turning the Eggs—Scaly Legs—Age of Pullets—Look Out for Bain—Moulting twice—White Ear Lobes—Indigestion—Inbreeding—Shipping Crate—Moulting in Fall—Duck Hatching—Shanghais—Feathered Legs—Crossing—Packing Eggs to ship—Several Questions—Maturity 32
Secretary A. P. A.—Cottonseed Meal—Drinking Vessel—Number for the House—Turkeys—Cracklings—Caponizing—Golden Wyandottes—Rheumatism—Minorcas—Black Spanish—Rattling in the Throat—Red Feathers—Oyster Shells—Gravel or Crockery—Renewing Infertile Eggs—Fatty Degeneration—Wants a Lamp—Meat Scraps—Battery for Regulating—Poultry Houses—Wants a Cross—Incubator and Tank—Heat in Incubators—Thunderstorms—Eggs for Incubators—Buff Breeds—Rubber Bar—About Feeding—Whitewash Sprayer—With or Without Lamp—About Wyandottes—Vegetables—About Mating 48
Marking Chicks—Thermostatic Bar—Cheap Eggs—Market Breed—Corn Cake—Preserving Eggs—Scotch Terrier—Harper Brooder—Difference in Eggs—Diarrhœa in Hens—The Standard—Commission Merchants—Uniform Heat—Learning the Diseases—Yearling for Setting—Too Fat—Hacking Cough—Space for Fowls—Feed for Setters—Number in Pens—Making Bars—Gluten—Ball Under Feet—Rye—Cold on the Bowels—White Wonders and Sherwoods—Hatching Duck Eggs—Various Questions—Hen Too Fat—Turkeys in Brooders—Clipping Wings—Tanks—Mites—Sex of Eggs—Eggs for Incubator—Duck Questions—Moisture for Duck Eggs—Removing Eggs—Caponizing Tools—Perfect Hatcher—Smallest Bantams—Bone Cutter—Room for Brooder 64
Wants Swan's Eggs—Light on Eggs—Lice on Turkeys—Severe Winters—Chickens are Dying—Thermostat and Thermometer—Breeds and Crosses—Egg Turners—Making Poultry Profitable—Feeding Chicks—What Is Alfalfa—Lice on Turkeys—Buff Pekin Bantams—Feet Frozen—Third Potency—Feeding Chickens 80
Preventing Lice—Legs are Weak—Diseased Bone—Chicks in a Car Load—Maturity of Hamburgs—New Blood—July Hatch—Rye and Millet Seed—Mosquito Bites on Chicks—About Eggs—Heads Bare—Eggs Don't Hatch—China Eggs—Prof. Corbett's Machine—Nuts for Chickens—Rupture of Blood Vessel—Black Plymouth Rocks—Size of Brooder—Black Gibralter—Value of Alfalfa 96
Mixing the Breed—About Ducks—Pekin and Aylesbury—Large Lice—Brassy Color—About Crosses—Probably Scrofulous—Must be Lice—Trees for Poultry Yards—Preventing Fighting—Pure-bred Chicks—Heat in Hen House—Hamburg Chicks—Cholera—"Vaccine"—A Batch of Questions—Malt—Ducklings—Changing Males—Chicks Ready Picked—Several Points—Alfalfa—Plastering a Poultry House 112
How Much Feed Per Day—Several Questions—Changing the Males—Leghorns—Sheep—Geese—Broilers—Wyandottes—Address of Paper—Feeding Ducks—Minorcas—Brahmas or Plymouth Rocks—Rats—Worms—Chicks in the Brooder—Animal Meal—Black Leghorn—The New Standard—Chicks Dying—The Markings of a Legborn—Blood—Black Leghorn Markings—Hamburgs—Strains for Leghorns—Eggs for Shipping 128
Can't Get Rid of Lice—Fresh Blood—Breeds—Iron Roof—African Geese—Chicks Died—Brown Leghorn Comb—Poultry House—Bed Bugs—Changing to Brooder House—Frozen Broilers—Six Questions—Poultry Houses—Layers—Varmints Several Questions—Douglass Mixture—How Many Chicks—Chicken Pox—Minorca Cross—Breeding Stock—Time to begin Incubators—Warmth for Chicks—Keeping Birds Pure—Buff Cochins 144
Pekin Ducks—Distinguishing Turkeys—Spongia for Roup—Description of Breeds—Lime and Droppings—How Much Feed—Single-Comb White Wyandottes—Feeding—Plymouth Rocks—Caponizing—Questions from Florida—Broilers—Points of White Plymouth Rocks—Poultry House in a Grove—Came Wrong—Silver Wyandottes—Philadelphia Broilers—Light Brahmas—Black Feather—The Next Standard—Roost—White or Red Clover—Space for fifty Hens—Buff Wyandottes—Coal Ashes 160
Eggs for Hatching—Poultry on the Pacific Coast—Preventive of Roup—Brown Leghorns for Breeding—Ruta Bagas, Beets, etc.—Langshans—Brooder for Ducks—Droppings and Plaster—Black Minorcas—Leghorns and Minorcas—Screen for Gravel—The Combs Turn Black—Descriptions—Eggs and Poultry—Taxes—Bone—How Much Cut Bone—Imperial Pekin Ducks—Leg Weakness in Chicks 176
Eggs for Hatching—Twitching—Rabbits as Meat—Mating—Crossing—Grit—Brown Leghorn Description—Doubtful—Sundry Inquiries—Millet Seed—The New Standard—Ducks and Chickens Together—Florida—Langshans—Difficulties With Chicks—Lice and Tarred Paper—Charges for Hatching—Death to Lice—Weight of Leghorns—Scraps—Flesh-Color Shanks—Difference in Leghorns—How Many Drakes?—Shipping Eggs—Ducks—A Year's Prices—Commission Merchant—Mann Bone Cutter—Green Bone 192
Burnt Out, But Up Again 183

THE POULTRY KEEPER INDEX.

Butter and Eggs..... 5
Buying and Selling..... 170

Cabbage for Hens..... 67
Cabbages for Poultry.....26, 149
Can He Do It?..... 18
Can He Sell Them?..... 83
Canker Cure..... 86
Capital Required..... 172
Caponizing and Notes Thereon..... 42
Caponizing Instruments (Illus.).....186, 187
Capons, Experiments with
Cockerels and Capons—General Observations—Experiment—Antiseptic Treatment — Caponizing by Lamplight—Summary of Experiments—Notes on Experiments..... 66
Capons—
For Market..... 4
Heavy..... 164
In Summer..... 58
Success with..... 43
Carbolic Acid Emulsion..... 157
Case for Consideration, A.....3, 53, 76
Cash and Poultry..... 156
Cash for the Work..... 122
Cater to the Public.....28, 80
Chance for You, A..... 152
Cheap—Very Cheap..... 9
Cheapest Thing Out, The..... 152
Chick Building, Our..... 53
Chicken Business, A Big—
No Chance for the Old Hen—Eggs and What Comes From Them—To Secure Guaranteed Eggs..... 59
Chickens—
Fraud, A..... 33
Manure on Fruits..... 92
On Farms, Raising..... 45
Too Good for..... 25
Vs. Wheat..... 21
Chicks—
A Trouble with..... 108
And Snow..... 150
Can't Raise His..... 135
Cold and Young..... 165
Deformed..... 76
Destruction of..... 23
Development, A..... 91
Die in the Shells, Why.....25, 52, 85
Die, Why Your..... 19
Dying in the Shells..... 68
Dying, The Cause of..... 116
For Home Use, Late..... 10
How to Feed..... 179
How to Raise..... 148
That are Feathering..... 122
The Cost of..... 92
The No Water Plan With..... 10
Chloroform in the Poultry Yard..... 144
Cholera—
And Lice..... 58
Chicken..... 2
Cure for Chicken..... 44
In Turkeys and Pea Fowls..... 36
It Is Not..... 100
Remedies..... 90
What Is..... 56
Clover as Food for Fowls..... 140
Clover, Cut..... 122
Club—
The American Plymouth Rock..... 87
And Their Uses..... 136
Buff Cochin..... 168
Canadian Wyandottes..... 73
Seattle Poultry..... 73
Specialty..... 72
Coal Ashes, Uses for..... 25
Cold Storage—
The Financial Aspect of Cold Storage—Value of Cold Storage Warehouse—Receipts as Collateral—General Benefits.....57, 163
Col. Boyer and Gen. Davis..... 83
Colorado Poultrymen..... 24
Combs—
Black..... 103
Freezing of the..... 56
Frosted.....122, 150
Coming of Warm Weather, The..... 22
Commission Men, A Word to..... 104
Commission Merchants.....71, 104
Comparison and Scoring..... 57
Comparison Can't Beat It..... 37
Condition Powder Test..... 43
Condition Powders..... 45
Confinement and Corn..... 129
Contents..... 1
17, 33, 49, 65, 81, 97, 113, 129, 145, 161, 177
Continues to Criticize..... 101
Corn—
An Opinion on..... 148
And Fat Hens..... 128
And Uncle Mike..... 4
As Staple Food..... 58
Composition of..... 140
Miller Purvis and..... 1
Still Harping on..... 121
Trap, Gets Into the..... 118
Cow and Hen Comparison, The..... 6
Crop, Hard.....28, 93
Crop Bound and a New Crop..... 20
Crop Bound Fowls.....55, 119
Cross—
A Good..... 20
Bred Fowls, Mr. Boyer and..... 136
How to Cross..... 80
Which Way to..... 12
Crosses As They Should Be..... 58
Crosses, Light Brahma
Crossing—
Experiments in.....73, 84
For Breast Meat..... 99
For Too Much..... 108
Fowls for Experiment..... 21
Leghorns..... 125
Mr. Cushman on.....121
With Wyandottes..... 106
Crowding at Night..... 26
Curious Advertisement, A..... 150
Curiosity, A Great..... 5
Cut Straw and Eggs..... 99

Dampness and New Houses..... 138
Depending on Whose Axe..... 129
Dirt and Filth..... 51
Disease—
Don't Buy..... 155
Inherited..... 150
Of Fowls..... 11
Of Stock, Winter..... 11
Of The Throat..... 100
Preventer, A..... 120
Spreading..... 125
Symptoms of..... 35
That Sleepy.....44, 83
Diseased Fowls, Eating..... 12
Disinfecting Foul Places..... 57
Division of Poultry, The..... 115
Doctors Disagree..... 83
Does it Destroy the Purity?..... 108
Dog Fancier, The..... 113
Dogs, Distemper in..... 5
Dogs Eating Eggs..... 125
Dominique Leghorns..... 157
Don't You Miss It..... 168
Dorkings and Crosses..... 122
Dorkings and Hardiness, The..... 146
Double Walk..... 150
Drawn and Undrawn Poultry..... 115
Dress and Ship Poultry, How to..... 147
Dressed Poultry..... 11
Dressing Fowls, The Cost of..... 39
Drinking Fountain, A Good..... 37
Drinking Fountain, A Keg (Illus.).....134
Drinking Vessels for Young Chicks..... 37
Dripping From the Wall..... 3
Droppings, The..... 150
Dry Dirt on the Floor..... 149
Ducks..... 83
A Cheap Fence for..... 138
A Fence for..... 153
And Geese, Keeping..... 102
And Water, Young..... 22
As Mothers..... 44
Breeding.....70, 91
Business, The..... 101
Culture, South..... 132
Eggs for Hatching..... 150
For Laying..... 125
For Market..... 26
Had Crumps, The..... 43
How to Fatten..... 10
Increase in Weight of..... 155
Mating Rowen..... 156
Ought to Raise..... 76
Rearing..... 92
The Common..... 67
The Large Breeds of..... 83
The Tag on a..... 87
Turnips for..... 67
Ducklings for Market..... 154
Ducklings, Hens Carrying..... 22
Dust Bath, The..... 150

Eating Their Eggs, Hens..... 122
Economy in Room..... 26
Editor's Little Say, The..... 168
Edward Atkinson's Theories..... 133
Egg-bound Hens..... 59
Eggs..... 108
A Day, Three..... 57
And Breed..... 93
And the Sitting Hen..... 70
Are Cash.....44, 185
At Different Times, Adding..... 85
Bad Flavored..... 48
Broken..... 150
By Parcels Post..... 170
By the Pound..... 171
Cooking..... 41
Double Yelk..... 67
Eating by Fowls..... 123
Eating Hens..... 49
Eating, Nest to Prevent (Illus.)..... 1
Eating, Prevention of..... 20
Experiments in Keeping..... 41
Flavor due to Feed..... 125
Food, A Scientific..... 148
For Select Customers..... 140
For Sitting Purposes, Keeping..... 26
Fresh Air and..... 183
Frozen..... 28
He Gets No..... 177
Huge..... 42
Infertile..... 38
In Cold Weather, Keeping..... 3
In May, Buying..... 24
In Summer..... 26
In the Nest, Exposing..... 58
It Was the..... 23
Keeping..... 167
Managing for..... 39
Millions of..... 27
No..... 122
Oil of..... 17
Per Day, Twenty-five Dozen..... 32
Production, Increasing..... 77
Rations.....128, 172
Rest, Must..... 76
Shapes of..... 107
Shells, Genesis of..... 5
Something About..... 91
Something About Buying..... 80
Something About Soft..... 169
Testers..... 44
To a Pound, How Many..... 122
Tree Tops and..... 153
What Is an.....67, 114
Will Pay..... 103
With Rough Shells..... 42
Egyptian Plan, Other Hints..... 133
Enemies of Poultry..... 121
Especially for our Readers..... 150
Establishment, A Large Illinois (Illus.) 2, 3
Establishment, Large French..... 3
Experience—
A Practical..... 84
An Ohio Man's..... 117
And Poultry..... 89
In California..... 53
Experimenting..... 80
Experiments, Mr. Wheeler's..... 133

Facts Are Stubborn..... 57
Fair, The Catskill..... 148
Fall Work..... 126
False Economy..... 100
Fanciers' Journal, We have bought the 73
168, 169.
Fancy, Hot Shot at the..... 107
Farm Flock, The..... 140
Farmers, A Word to..... 28
Farmers' Flocks..... 65
Fat—
Get Them..... 26
Hens Again..... 75
Too..... 20
Fatten the Fowls..... 80
Fattening—
Poultry..... 139
The Fowls..... 36
Young Fowls..... 94
Feather Eating..... 4
Feather Growing, The Drain of..... 107
Feather Pullers, Cannibal..... 12
Feather Pulling—
An English Remedy For..... 28
And Roup Cured..... 179
Bit to Prevent (Illus)..... 74
In the Flock..... 10
Feathering of Chicks, Rapid.....58, 112
Feathers for Use, To Prepare.....28, 78
Feed—
About..... 134
Changing to New..... 38
For a Flock, How Much..... 97
For Young Chicks..... 6
How Much to..... 103
How to Select and..... 27
Is Worth, What..... 11
Is Wasted, How the..... 58
Laying Hens, How to..... 155
Mill..... 180
Per Hen, How Much..... 171
Too Heavily, He..... 164
Too Often, He.....182, 183
Feed Cutter, A Home-made (Illus.)..... 18
Feeding..... 148
A Point on..... 5
Chicks, About..... 99
Corn Husks..... 6
Cut Bone..... 114
Dough..... 156
Economical..... 38
Eggs to Fowls and Chicks..... 26
Eggs to Poultry..... 58
Errors of..... 182
For Eggs..... 157
Fowls and Chicks..... 85
Fowls by Electricity..... 48
French Experiments in..... 124
Hard-Boiled..... 176
Hens to Make Them Set..... 123
In Troughs..... 36
Irregular..... 54
Mixed Lots..... 83
On the Ground..... 61
Places, Foul..... 22
Poultry, An Experiment in..... 112
Probably High..... 113
Select Foods..... 58
Soft..... 77
Summer..... 26
Three Times a Day..... 116
Too Often..... 18
Useless Birds..... 149
Fed Off of Their Legs..... 22
Fence, A Movable..... 173
Fences, Wind Break (Illus.)..... 138
Few Five Cent Books, A..... 41
Fighters, Wanted (Wants)..... 24
Fighting the Jiggers..... 53
First Year, The..... 8
Fish and Corn Fodder, Curing..... 76
Fish for Poultry..... 171
Five Cents Per Pound..... 157
Flock of Cannibals, A..... 42
Flock, This Shows for a Large..... 43
Foods and Eggs—
Two Classes of Foods—Balanced Foods—How to Compound a Ration—Variation and Variety..... 178
Food—
And Brooder for Chicks..... 49
Atkinson's Hen..... 151
Before Fowls, Keeping..... 103
Bulky..... 67
Continually, Dry..... 125
Decaying..... 22
Dry or Wet..... 60
Equalizing..... 71
Figuring on..... 144
For Chicks, Dry..... 155
For Eggs, Cost of..... 58
In Winter, Dry..... 125
Mixed..... 122
Scalded and Raw..... 21
Soft..... 93
Something About..... 176
Summer..... 78
The Cheapest..... 67
The Cost of Animal..... 100
To Give, How Much..... 102
Winter..... 154
Winter Green..... 49
Foolish Prejudice, A..... 39
Foraging and Eggs..... 90
Foraging and Foods..... 113
Foul Air Nonsense..... 5
Foundation Stock, The..... 123
Fowl, Anatomy of the
The Head—The Beak—Neck—Breast Bone—Wings—Legs—Crop—Gizzard—Food—Value of Grit—Stomach—Liver—Spleen—Circulatory—Apparatus—General Remarks 82
Fowls—
Common..... 34
Cross Bred..... 17
For Pleasure, Keeping..... 59
For Profit..... 28
For Profit in Winter..... 119
For the Table.....11, 44, 93
How to Catch a..... 154
In the Fall, Sell..... 56
Shall I Keep, How Many..... 140
Frauds..... 179
Francis A. Mortimer, Death of..... 65
Fresh Air Mistakes..... 89
Fresh Eggs, A Point on..... 139
Fresh Meat Does the Work..... 134
From North Dakota..... 179
From Old Kentucky..... 6
From the Land of Flowers..... 53
Fumigating a Poultry House..... 140

Game Chicks Died, Only the..... 74
Gammerdinger's Large Establishment, Mr..... 167
Gapes..... 123
A Cure for the..... 52
A New Remedy for..... 10
And Cold Storage..... 87
How to Cure..... 90
Look Out For..... 3
Tobacco for.....25, 77
Worm, The..... 74
Geese—
And Ponds..... 26
Chopped Turnips for..... 160
Jewish Holidays and..... 23
Keeping..... 125
On the Farm..... 83
Picking..... 86
Plucking..... 27
Profit in..... 192
Raising..... 94
Selecting..... 86
Gets Puzzled Over Advice..... 101
Gets Things Fearfully Mixed..... 61
Gives all the Details..... 117
Glass, Plenty of..... 150
Good Black Color..... 45
Good Start on a Small Space, A..... 53
Goslings, The..... 11
Grand Kingeringum, The..... 105
Grass and Meat..... 23
Grease on Chicks..... 85
Grease the Heads..... 10
Green Food—
Growing the..... 4
How Mr. Pierce Keeps..... 86
Summer..... 62
Grit and Work for Hens..... 5
Ground Bone for Food..... 60
Growing Fowls..... 115
Guineas.....37, 150
And Their Value..... 59
Hatching Young..... 55
In the Field..... 32
Management of..... 103
Gushing Circular, A..... 52

Half Rate Excursion..... 110
Hardiness..... 90
Hatch—
A Good..... 37
And Raise Them, How to..... 68
But Hard to Raise, Good..... 117
How He Got Good..... 20
Them Right Along..... 116
Hatching—
Deserted Eggs..... 110
Eggs, Fresh Air for..... 60
Experiences..... 85
Good..... 20
Resting Eggs for..... 107
Some Truths on..... 54
The Eggs, Failures in..... 49
What To Do When..... 46
Hawks and Crows..... 17
Hawks, Damage by..... 112
He Can't Afford It..... 97
He has the Mumps and Experience..... 84
He Says He Did Not Do It..... 151
He Says It is Buncomb..... 60
He Wants to Press the Button..... 9
He Was Determined to Get There..... 68
Heat, Bottom..... 53
Heavy Rain Storms..... 17
Hens
A Record of Thirteen..... 76
Ahead—Perhaps..... 83
Ahead—The Wooden..... 5
An Acre of..... 44
And Brooders..... 155
And the Cow, The..... 170
And Horse Feed..... 1
At Auction..... 11
Big Profit Per..... 52
Don't Stuff the..... 67
Fat When Broody? Are..... 54
Five Hundred..... 177
Hatch Well, Why Some..... 36
Have Done, What His..... 38
In the Flock, Strange..... 10
Making a Living from..... 138
Must, the..... 43
Or Pullets.....80, 81
Out of Season, The..... 157
Pay, Can Make 500..... 32
Selling Old..... 67
That Lay the Most Eggs..... 11
Hernia and Leg Weakness..... 68
Heroic Hen, The..... 150
Hints, A Few Condensed..... 97
Hold to the Good..... 78
Homeopathic Remedies..... 135
Homeopathic Treatment..... 70
Homeopathy, Inquiries In..... 35
Houdans and Crevecœurs..... 81
Houdans, Mr. Chalfant's (Illus.)..... 187
House—
A Low-Priced..... 93
Cheapest of All (Illus.)..... 75
Double-Deck..... 42
With Glass Runs (Illus.)..... 10
How About This?..... 183
How Best to Proceed..... 23
How He Gained His Knowledge..... 68
How It Strikes Us..... 105
How Monstrosities Are Produced..... 37
How Much..... 100
How Much Capital.....62, 76
How Much Land?..... 155
How to Quickly Grow Shade Trees..... 180
How to Treat a Man..... 124

Incubation in China, Artificial..... 108
Incubator, The Prairie State—
Application of Heat—The Ventilation—Moisture—Construction—Improvements—Special Duck Machine—Reputation..... 146
Incubator—
A Cheap Homemade (Illus.)..... 71
An Experimental..... 5
And Brooder House, An (Illus.)..... 97
And Hens..... 10
Begin With..... 115
Better than Hens Are..... 92
Buying An..... 55
Cellar for an..... 135

THE POULTRY KEEPER INDEX.

Experience..... 101
Experiments in Operating an..... 182
Fresh Eggs for..... 37
Hatches..... 92
Heater for (Illus.)..... 70
Operating the..... 103
Plans for an..... 72
Rooms of A. J. Hallock's (Illus.).. 146
Running..... 68
Should Do, What an..... 26
The Home-made..... 122
The Reliable (Illus.)..... 55
Variation in an..... 149
Indian Games—
A Puzzle..... 89
Chicks..... 87
Cross That..... 89
Imported..... 4
Inquiries, a Few..... 135
Insect Destroyers, Fish Oils as..... 145
Insect Powder—
Best of All, Likes..... 101
Not Injurious..... 101
On Chicks..... 116
Insecticides, Using..... 44

Javas, Light in the..... 3
Jersey Cattle and Tests..... 88
Judges by Trade..... 136
Just What We Are Trying..... 110

Keep it Up..... 19
Keeping the Floor Clean..... 53
Keep the Floor Covered..... 137
Kentucky Getting Ready..... 40
Kerosene Emulsion..... 86
Kerosene Emulsion and Lice..... 56
Kerosene Plan to Make Hens Lay, A... 183
Kicks a Pet Theory..... 53
Killing Poultry, About..... 126
Kind of Floor, The..... 177
Knapp Bros..... 166
Know What You are Doing..... 6

Lady's Experience, A..... 37
Lameness..... 150
Lameness in the Flock..... 113
Lamp, An Incubator Safety (Illus.).... 58
Langshans, White on..... 44
Large Establishment, A..... 135
Latest from Atlanta, The..... 157
Lawn Clippings for Winter..... 156
Lay, Could Not Make Them..... 42
Lay, Making the Hen..... 75
Lay, They Do Not..... 163
Layers, Common Flocks as..... 122
Layers, Late..... 71
Laying—
Good Winter..... 6
Hens, Overfeeding..... 91
Plans for the Future..... 116
Preventing..... 22
Purchasing Hens for..... 36
Winter.....6, 20
Pullets..... 101
League of American Poultrymen, The. 57
Leg Weakness.....27, 110
Leg Weakness in Hens..... 43
Leghorns—
And Brahmas..... 183
Are Sitting, Too, The..... 61
As Egg Producers..... 92
As Winter Layers..... 123
Fowls, The.....100, 149
In a Cold Climate, White..... 20
Lettuce for Poultry..... 110
Lice.....44, 59, 93
A Remedy for..... 37
A Sure Way to Kill..... 156
And Gapes..... 12
Destroyer, Lye the Best..... 164
Destroying..... 148
Every Time, Head..... 75
Fumigating for..... 76
Gasoline for..... 180
Keeping Free from..... 84
Killing the.....71, 148
Look Out for..... 10
Lots of..... 134
Onions Will Kill..... 82
Red Spider..... 140
Save This for..... 62
Sources of..... 149
Sulphide of Carbon for..... 44
The Great Drawback..... 101
The Way to Rout..... 23
Life of the Poultry Raisers..... 116
Light Brahma, The.....134, 150, 181
Mr. Wood's (Illus.)..... 173
Points on..... 139
Lime and Lice..... 6
Lime for Fowls..... 22
Lime for Roup and Gapes..... 155
Linseed Meal, Some Facts About..... 138
Liver Disease..... 28
Look Out for Him..... 44
Look Out for Them..... 72
Los Angeles Makes a New Departure... 153
Loss Sustained by All, A..... 99
Lump on the Jaw, A..... 118

Make It Pay..... 168
Males Heavy..... 125
Males, Raise Your Own..... 119
Manitoba, Good Results in..... 5
Manure Heap, Working in the..... 114
Manure, Hen..... 26
Manure, Wrong on the Poultry..... 1
Market—
Chicks Should Be, What..... 65
Clean Eggs for..... 59
Early Chicks for..... 90
Glutting the..... 36
Make a Home..... 122
Over-stocking the..... 171
Quality, Color as a..... 61
Sending Eggs to..... 106
Stock, Choice..... 26
The Family Home..... 98
Mating, Carelessness in..... 138
Mating for Hardiness..... 125
McFetridge's Duck Book..... 102
McFetridge, The Duck Raiser..... 166
Meat—
A Necessity..... 90
And Bone.....23, 149
And Broth, Cooked..... 80
And Milk..... 71
Mr. Kinney on..... 154
Mentionings.....137, 153, 169, 184, 185
Microbe Killer, A..... 106
Middlings as Poultry Food..... 58
Midnight Marauders..... 83
Milk and Buttermilk in Summer..... 65
"Miller Purvis" on Fat Sitters..... 75
Millet Will Raise the Chicks..... 20
Minks and Hawks..... 67
Minorcas, Has Faith in the..... 84
Minorcas, Mr. Pugh's Black (Illus.)... 3
Minorcas, Rose-Comb..... 76
Minorcas, Rose-Comb Black.....37, 108
Mistakes..... 140
Mistakes and Omissions..... 27
Mistakes, Avoiding..... 6
Moisture—
And Eggs.....133, 134
And Temperature..... 28
Believes in..... 68
Experiments in..... 53
For Eggs..... 105
Gives Little..... 54
How Much..... 73
In Incubators..... 84
Or No Moisture..... 32
Something New On..... 89
Money Saved..... 124
More Interesting Than Ever..... 53
Mottled Birds, Working Off..... 73
Moulting Hens.....76, 100, 101
Mr. Devlin Endorses Mr. Phillips..... 73
Mr. Edw. Atkinson Replies..... 172
Mr. Felch and the Decimal Association 136
Mr. Hinkle Opens His Batteries..... 74
Mr. Kinney's Improved Method..... 96
Muscovy's Crossing With..... 153

Nebraska Makes An Appropriation.... 40
Nests for Sitters..... 150
Nests, How to Make..... 84
New Houses are Damp..... 149
New Jersey Breeders, Meeting of..... 153
New York State Poultrymen, The..... 41
Nitrogen in Grains..... 41
No Free Ads for Him..... 60
Non-Sitters.....23, 148
Non-Sitters, Making..... 51
North Carolina, From..... 20
Northern Middlesex at Clinton, The... 105
Not Profitable..... 119
Nux Vomica for Fowls..... 23

O! Fly to Our Relief!..... 85
Oat Patch by the Hen House..... 44
Object Lessons to Beginners..... 58
Odds and Ends..... 20
Offspring, Effects on the..... 117
Oil-Cake Meal..... 67
One of the "Wimmen" Replies..... 20
One of Those Ailments..... 187
One Pound Extra..... 138
Our Sentiments on Abuse..... 114
Our World's Fair Views..... 177
Overfeeding or Lice..... 75
Over Production of Poultry..... 107
Owls and Hawks..... 156

Packing Broilers..... 131
Paid the First Year.....116, 117
Pauel, Portable (Illus.)..... 18
Papering the Wall!..... 145
Partridge Cochins..... 166
Pea Comb on Fowls, The..... 70
Penna. Railroad Station in Phila. (Illus) 109
Philosophy and Facts..... 120
Physician on "Fresh Air," A.....136, 137
Piedmont Poultry Association..... 62
Pierce Breaks Loose..... 161
Pigeons..... 57
A Kick on..... 96
About..... 77
Keeping..... 22
Pens..... 58
Plenty of Sunlight..... 138
Plucking and Scalding, A Kink on..... 113
Plums in the Chicken Yard..... 139
Plums in the Poultry Yard..... 76
Plymouth Rock..... 78
And Brahma Cross..... 23
"Eureka," The (Illus.)..... 4
Origin of the..... 55
Pullets..... 119
Point for You, A..... 184
Points Out Reforms..... 180
Poultry—
A Division of..... 12
A Revolution in Keeping..... 82
And Pet Stock Company..... 77
And Pork..... 147
As a Farm Specialty..... 61
As Insect Destroyers..... 98
At Fairs..... 99
Autumn Management of..... 94
Business, Going Into the..... 61
Cheap Lands for..... 90
Don't Pay, Why..... 139
Droppings, Keeping..... 33
Farming.....21, 86
Farm, A Successful..... 148
Getting Rich on..... 27
Grading Up..... 25
Improving..... 32
In East Tennessee..... 180
In Florida..... 6
In France..... 17
In Orchards..... 172
In Texas..... 183
Industry is Recognized, How the.. 27
Keeper Specials, The..... 168
Keeper Special No. 2.....24, 25
Locations for Raising..... 67
Management of..... 182
Manure..... 122
Manure, The Waste of..... 103
Mistakes With.....57, 82
On a Small Area..... 45
On Two Town Lots..... 52
Poor Selling..... 112
Products, The..... 16
Products, Value of..... 81
Raising for Women..... 53
Society, N. Y.....72, 73
The Cost of..... 74
The Origin of..... 48
Yards, Filthy..... 147
Yard, Fruit in the..... 123
Poultry at the World's Fair—
The American Poultry Association —Some Awful Judging—Politicians Rule the Roost—A Sheep Man Runs the Machine—Votes That Were Bogus.....137, 141
Poultry Houses.....26, 110
A Farmer's..... 37
A Large..... 164
A Light (Illus.)..... 59
Cheap Paint for..... 145
Cleaning the..... 70
Cold..... 149
Double (Illus.)..... 49
Floors..... 154
For a City Lot (Illus.)..... 81
For Small Flocks (Illus.)..... 177
Heating a..... 157
Mr. Johnson's (Illus.)..... 113
Mr. McCormick's..... 5
Pigeon Loft and Sheds, (Illus.).... 34
Room in the..... 70
The Comfort (Illus.)..... 91
Two Story (Illus.).....36, 164
Warning the..... 157
Window, Cheap..... 101
Windows of a..... 91
With End Windows (Illus.)..... 129
With Protected Roost (Illus.)..... 33
Poultry Shows..... 100
Howard County (Indiana)..... 157
Farmers and..... 93
Missouri State..... 137
Southern Ohio..... 120
Precautions for Winter..... 115
Precocious Chick, A..... 166
Preserving Eggs—
The Sulphur Process—The Havana Process—The Scientific American Process—The Boston Globe Process —The Farmer's Ledger Experiments—The Poultry Yard Process —The Prairie Farmer Process—The French Farmer Process—The Birmingham Process—Mrs. Moore's Process—Miscellaneous Process— 20, 50, 51, 100
Prejudice Against Black Fowls..... 55
Prices for Eggs..... 125
Prices, Low..... 86
Pride in the Flock..... 192
Profit, Separating the..... 153
Profits for Poultry, Estimating the.... 34
Profits, Quick..... 78
Profitable Poultry Farming.....105, 168
Progress Made, The.....152, 153
Prolificacy of Fowls..... 78
Prosperous..... 40
Publisher's Department, 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192.
Pullets, Early..... 28
Pullets, Young..... 55
Pure Bred Stock and Farmers..... 90

Quality Makes the Price..... 71
Queer Case of a Hen..... 69
Questions, A Batch of..... 46
Questions, How to Ask..... 18

Rain Storms..... 23
Rambling Thoughts..... 181
Range, Value of the..... 92
Ration, A Balanced..... 23
Ration Balancing a..... 155
Rats Driven Off..... 138
Rats, Harboring..... 90
Rats in Poultry Houses..... 57
Read This Twice..... 57
Read Your Paper..... 69
Red Caps..... 76
Red Pepper for Poultry..... 36
Refuse From Factories..... 125
Regulating the Grain Supply..... 157
Regulator for Incubator (Illus.)..... 67
Reliable Incubator; The (Illus.)—
An Incubator That Has Been Successful—Hundreds in Use—Something About It—Heating Arrangement—Regulating the Heat—The Woodwork—The Regulator—Turning the Eggs—Ventilation—Moisture—Value of Early Chicks—Cost of Conducting a Poultry Business—General Remarks.....162, 163
Reliable Poultry Yards, The (Illus.).... 166
Revision, Mr. Babcock and..... 12
Roasting, Large Chicks for..... 65
Roof and Floor, The..... 23
Roofing, Tarred Paper for..... 67
Roosters—
Cross-Bred..... 10
Feeding Useless..... 45
More About No..... 105
Too Much..... 91
Roosters Wanted, No—
Hens Will Lay More Eggs Without the Presence of Males—Feather Pulling—Daily Food—Mr. Wheeler's Experiments..... 98
Roosting in Trees..... 115
Roosting Shed (Illus)..... 65
Roosts..... 150
A Covered (Illus)..... 145
A Rat-Proof (Illus)..... 83
And Lameness..... 133
And Nest, Movable (Illus)..... 21
And Platforms..... 37
Fresh Earth Under the..... 22
High..... 67
Kerosene on..... 100
Lice-Proof (Illus)..... 35
Movable (Illus)..... 99
Round or Square.....43, 55
Roup..... 114
A Remedy..... 133
And Cholera..... 177
And Gaps..... 100
And Lice, A Remedy for..... 164
My Cure for..... 140
The Homeopathic Remedies for.... 43
This is the Genuine..... 134
Turpentine for.....60, 70
What is..... 22
What Is It? The..... 43
Roup, A Pointer on—
What is Roup?—How to Doctor and What to Give—About Disinfecting..... 156
Run, A Covered Movable (Illus)..... 17
Runs, Covered..... 52
Runs, Water-Proof Muslin for..... 58

Sadly Off..... 41
Salt, Pepper and Ginger..... 27
Sandy Soil the Best..... 39
Saved Seventy of Them..... 68
Scabby Legs..... 23
Scaly Legs in Fowls, (Illus.)..... 106
Scarengers, Chickens as..... 156
Scenes from Every Land..... 41
Science as is Science..... 144
Score Alike, They..... 12
Score Card Teaches Nothing, The..... 38
Score, Value of a..... 121
Scoring, Remarkable..... 9
Scoring, The Mystery of..... 7
Scoring the Standard..... 69
Scrapings from the yards..... 67
Scratching Places..... 25
Scrofula? Is It..... 148
Sebright Bantams..... 156
Self-Feeder for Young Chicks (Illus.).. 132
Sell, A Point on When to..... 90
Send Us Your Experience..... 168
Sex of Eggs..... 73
She Keeps Up the Work..... 148
Shipping—
Coop, Making a..... 183
Coop, Mr. Bennett's (Illus.)..... 131
Healthy Fowls..... 71
Live Fowls..... 10
Show—
At Narragansett Park, The Great.. 77
Birds, Treatment of..... 125
Monstrosities at..... 16
The Atlanta..... 141
The Chicago..... 169
The New Orleans..... 152
The New York.....9, 185
The Phila..... 9
The World's Fair..... 145
This Year, The..... 40
To Occur..... 151
Signs of Health..... 26
Signs of Thrift..... 124
Silent Contempt..... 73
Silo, The..... 49
Sit, Let Your Hens..... 80
Sit, Making a Hen..... 100
Sit or Set..... 149
Sitting—
Box, Lanes Continuous (Illus.)..... 118
Hen and Lice, The..... 22
Hen, Broke Up..... 94
Hens Cease, Why..... 125
Hens, Handling..... 59
Size and Space..... 129
Slow Growth in Summer..... 26
Small Gains and Profits..... 98
Snails and Lime..... 164
Snow Storms and Poultry..... 125
Soapsuds and Lice..... 61
Soft-Shell Eggs..... 112
Solution Solved, A..... 53
Some of the Neighbors Say..... 64
Something—
About a Bluff..... 152
For Mr. Kinney..... 108
Left Out..... 147
You Want.....121, 150, 172
Sour Milk..... 150
South Carolinians Wrath, A..... 72
Southern Fancier Suggests, The..... 23
Space for a Flock, How Much..... 23
Speck, Only a.....9, 18
Split Nut Feed Handle (Illus.)..... 187
Spongia for Roup..... 163
Sprague Commission Company..... 192
Staggerer, A..... 88
Standard Language..... 73
Stock, Extra Large..... 154
Stock Now, Buying..... 73
Stop that Tired Feeling..... 164
Straw, A..... 129
Success and Advice..... 101
Sulphur Burning..... 26
Summer Pays Better than Winter..... 92
Summer Resorts..... 60
Sunflower Seed, Using..... 23
Swapping Eggs..... 138
Swelled Heads and Eyes..... 154
Swelled Heads and Sore Eyes..... 39
Swellings and Tumors..... 83

Tarred Paper on Shingles..... 132
Temperature, The..... 146
Temperature, Raising the..... 150
Testing Eggs—
Various Methods of Testing—A Clear Egg—A Fertile Egg—An Addled Egg—Early Testing—Swimming the Egg..... 132
That Butter and Egg Article..... 69
That Draft of Air..... 150
They Cannot Let Go..... 11
They Died..... 4
Thieves in the Yards..... 39
This and That.....139, 148
This Beats All..... 121
To All Interested..... 169
Too Many Loafers..... 125
Too Much of a Good Thing..... 57
Troughs in Winter..... 125
True Hawk Story, A..... 164
Turkey—
A Prolific..... 183
A Smart..... 28
Care of Young..... 4
Die, Why the Young..... 64
Fattening the.....97, 156
For Breeding..... 149
In-Breeding of..... 138
In Incubators, Hatching..... 155
Raising Young..... 60
Success With..... 22
The Breeding..... 123
The Bronze.....84, 116
Wild..... 164
Young..... 10
Turkeys—Experiments With—

THE POULTRY KEEPER INDEX.

Confinement and Free Range—Wild Turkey Crosses–Improvement with Wild Blood—Some Valuable Facts 130, 131
Two Editors Now..... 24
Two Kinds of Improvements..... 23

Uncle Mike on Hamilton..... 135
Utilizing Bulky Refuse..... 115

Van Doren's Yards, Mr..... 165
Variety and Results..... 122
"Variments," Sitting a Trap For..... 6
Ventilation..... 164
At Zero..... 5
Poultry-House..... 155
Poultry Houses in Winter..... 139
Something About..... 114
They Get Lots of..... 192
Top..... 105

Vermin, Harboring..... 147
Vermin Preventive, A..... 44
Vice of Laziness, The..... 22
Vindicated..... 136
Visited "Uncle John"..... 101
Von Culin Incubator at Chicago, The.. 160

Wants to Know How..... 19
Warmth and Eggs..... 129
Warts on Chickens..... 107, 156
Warts or Sores on the Heads..... 135
Water—
Fountains..... 8
In Summer..... 49
Trough, Summer (Illus.)..... 92
Warm in Winter, Keeping the..... 6
Watering the Hens in Winter..... 155
Waterproofing Cotton Cloth..... 3
Webster & Hannum Cutter, The (Illus.)..... 147
Webster Wheelbarrow, The (Illus.).... 165
Weight—
And Prices..... 77
Of Eggs and Chicks..... 73
Of Eggs, The..... 86
Too Much..... 77
What—
About those Prices?..... 103
Is the Matter?..... 135
To Do When Prices are Low..... 19
Was Done the First Trial..... 38
Wheat Chaff..... 90
When to make the Profit..... 93
Where the Profit Comes In..... 155
Whew!!!..... 76
White—
Indian Game (Illus.)..... 115
Langshans, Truth on..... 100
Leghorn's, Mr. Forsyth's Rose-Comb (Illus)..... 170
Sports..... 41
Whitewash, Brilliant..... 17
White Wonder Fowls, Standard for.... 103
Why the Farmer Fails..... 183
Wigmore's Instruments..... 167
"Wimmen" and Chickens..... 60
Wings, Cutting the..... 58
Wire Fences in Winter..... 99
Working Up Raw Material..... 67
Worms in the Intestines..... 85, 87
Worms or Cholera..... 118
Wyandottes, Mr. Kellar's Golden (Illus.)..... 19
Wyandottes, Origin of Buff..... 10

Yards, Peach Trees in Poultry..... 26
Yards, Poultry..... 42
Yolks, Light Color of..... 150
Your Mistake..... 168

Acme Library Card Pocket
Under Pat. Sept. 26, '76, "Ref. Index File"
Made by LIBRARY BUREAU
146 Franklin St., Boston
Keep Your Card In This Pocket